Computing Long-Term Curriculum Plan

Intent	For all children to have: • access to a well-rounded and rigorous computing curriculum that equips them with the necessary knowledge and skills to thrive in a digital world. • opportunities to develop their computational thinking, problem-solving abilities, creativity, and digital literacy, while fostering a love and appreciation for technology. • Experiences that ensure that they become responsible and confident users of technology, empowering them to engage safely and positively in a rapidly evolving digital society.
Implementation	*Progression*: a clear progression of skills and knowledge, building upon prior learning and ensuring a seamless transition from one year group to the next. *Embedded in the curriculum*: intended to be integrated within the existing primary curriculum. Teachers are encouraged to identify cross-curricular opportunities to incorporate computing concepts and skills. *Computational thinking*: emphasis is placed on developing computational thinking skills, including problem-solving, logical reasoning, and algorithmic thinking. These skills are essential in fostering creativity, critical thinking, and digital literacy. *Programming*: the curriculum introduces the fundamentals of programming, including algorithm design and coding. As students progress, they are encouraged to create, debug, and modify their own programs using appropriate tools and software. They are also expected to understand the importance of computational precision and debugging techniques. *Digital literacy and safety*: centrailises the importance of digital literacy and responsible use of technology. Pupils learn about online safety, cyberbullying, and the ethical implications of digital technologies. They are taught how to protect their personal information and how to use technology in a respectful and ethical manner. This is clearly linked to our Online-Safety curriculum that bridges Computing and Personal Development. *Creativity and innovation*: we encourage students to explore their creativity and develop innovative solutions using technology. They are given opportunities to design, create, and evaluate digital products, fostering skills in areas such as multimedia, coding, and game design. *Vocabulary:* Providing a progressive, systematic building of vocabulary and concepts linking learning over time to enable the secure building of knowledge, skills and understanding. *Assessment*: we use a range of assessment strategies, including teacher observation, formative assessment, and pupil self-assessment. Each unit of work ends with a knowledge capture task'
SEND	Children who are identified as having SEND may have specific needs and therefore adaptive and targeted support will be outlined in short-term planning. This may also be reviewed through the child's EHCP and/ or Pupil Progress Meetings where elements of adaptation may be recommended by external agencies. It is also important to recognise that children identified as having SEND may not always be the least able in Computing and could excel in the subject. Pupils' attainment will be assessed in a subject-specific manner and based on their strengths rather than barriers.

Values						
	Trust	Love	Faith	Forgiveness	Peace	Hope

Computing Golden Threads			
Computing Systems and Networks	**Programming**	**Online Safety**	
Creating Media	**Data and Information**	- See curriculum overview and PD links	

Our EYFS curriculum is planned and sequenced in line with EYFS Framework expectations and Development Matters. The Prime Areas of Learning (*Communication and Language*, *Physical Development* and *Personal, Social and Emotional Development*) feed directly into **all** later learning. Below is exemplification of what might be covered specifically linking to computational thinking, please see our Early Years to KS1 bridging documents for further exemplification on how our Early Years lays the foundations for learning in **all** other subject areas.

The Computing Golden Threads in Early Years set the foundation for later learning:	**Creating, Pattern, Logic, Algorithms, Decomposition, Collaborating**

	The EYFS lead may choose to use a unit such as this to develop computational thinking within the classroom:	**Other Possible Units of work**	**Points to note.**
Reception	**How awesome is autumn?** **On completion of the unit, pupils will have thought about…** What do we need for this part? Which objects shall we choose? How did you make that? Can we check what we have done so far? Does anything need changing? What do you like about yours? I wonder Where will you start? Which path will you take? Why? Which path would be best? How do you know? How it could be better I wonder which one comes first What are you going to do? What are you going to do first/next? Why? Which part comes next? How do you know?	**Can winter be warm?** Concepts & Approaches: Algorithms, Creating, Collaboration, Decomposition, Tinkering, Persevering Snowmen scarves and patterns, creating igloos and bird feeders- all take centre stage in our three winter themed activities **What are the signs of spring?** Concepts & Approaches: Abstraction, Tinkering, Creating, Collaborating, Algorithms, Persevering, Decomposition Three Spring themed activities see the children make a Rabbit run, create Junk scarecrows and explore sequencing whilst planting seeds**.** **Do we like to be beside the sea?** Concepts & Approaches: Tinkering, Persevering, Patterns, Logic, Decomposition, Debugging, Collaborating, Algorithms Children explore their surroundings and get creative, take a journey and make a map, and discover seaside tangrams, in these three fun activities. **How busy are our bodies?** Concepts & Approaches: Algorithms, Decomposition, Debugging, Logic, Patterns, Abstraction Four activities that help children discover how bodies move and grow. Using the resources provided they	In EYFS we respond to the interests and needs of the children in each cohort. The EYFS Lead plans with this in mind and will therefore choose when, and if, any of these optional units are completed. **Adaptations** The EYFS curriculum is highly adaptive in all areas of learning and our curriculum design recognises the different strengths and needs children may bring to the learning environment. We promote the Unique Child Principle and this is reflected in our planning and the adaptations you will see in our setting. Examples of adaptations you may see that links to computational thinking are: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.
Possible Lessons	**L1:** Garlands Galore – *creating, pattern, logic* **L2:** Leaf Labyrinth – *logic, algorithms, decomposition, creating.* **L3:** Pumpkin Soup - *algorithms, decomposition, collaborating*		
ELG Links	**Creating with Materials** - Safely use and explore a variety of materials, tools and techniques, experimenting		**Enhancements** *Please see EYFS curriculum documents*

	with colour, design, texture, form and function. **Fine Motor Skills** - Use a range of small tools, including scissors, paint brushes and cutlery. **Building Relationships -** Work and play cooperatively and take turns with others **Gross Motor Skills -** Negotiate space and obstacles safely, with consideration for themselves and others **Managing Self** - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices	explore and learn about parts of the body, growth and movement. Simple algorithms are created and adapted to form a routine of movements. **Does this boat float?** Concepts and approaches: Algorithms, Decomposition, Creating, Tinkering, Logic, Patterns, Abstraction, Collaborating A journey of discovery as they investigate boats. Four activities - includes different uses of boats, floating and sinking predictions, creating a good boat through exploring designs and role play. **Shall we fly a rocket?** Concepts and Approaches: Algorithms, Collaboration, Persevering, Creating, Pattern, Logical reasoning, Tinkering, Abstraction 3 space themed activities to develop pupils computational thinking and problem solving skills. Include creating algorithms to direct a rocket through space and spotting patterns in pictures of aliens.	
Development Matters Links.	**Active Learning** - Respond to new experiences that you bring to their attention **Creating and thinking critically** - Review their progress as they try to achieve a goal. Check how well they are doing. **Mathematics** (3 and 4 year olds) – Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. **Mathematics** (Reception) – Continue, copy and create repeating patterns. Make patterns with varying rules (including AB, ABB and ABBC) and objects and invite children to continue the pattern. **Understanding the world** (3 and 4 year olds) – Use all their senses in hands-on exploration of natural materials. Begin to understand the need to respect and care for the natural environment and all living things (Reception) – Explore the natural world around them. Understand the effect of changing seasons on the natural world around them		

	Autumn 1	Autumn 2	Spring 1
Year 1	**What is technology?** **On completion of the unit, pupils will know…** • what technology is • how technology can help them in their everyday lives. • the different components of a computer • basic keyboard and mouse skills. • some ways in which they can use technology responsibly.	**How can we paint using computers?** **On completion of the unit, pupils will know…** • that a range of tools can be used for digital painting. • how to use these tools to create their own digital paintings • that inspiration can be taken from a range of artists' work. • about their preferences when painting with and without the use of digital devices.	**Can a robot be given instructions?** **On completion of the unit, pupils will know…** • *early programming concepts.* • what individual commands are • how commands change what the floor robot does • how to use what they know about commands to start predicting the outcome of programs. **A**
Key Skills	- locate examples of technology in the classroom - locate examples of technology in the wider world - switch on a computer - log into a computer - use a mouse to click and drag - click and drag to manipulate the cursor on the screen - save work to a provided file - type on a keyboard (name) - use the delete key to delete letters - open work from a file - use the arrow keys to move the cursor - recall elements of the school user agreement - explain what we have to do to stay safe and healthy when using technology.	- identify freehand tools and know what they do - draw lines on screen - make marks on screen - use the shape tool - use tools effectively and explain reasons for choices - create a recognisable picture - know how to change colours - know how to manipulate colours - mimic a given (artists) work - change colour and brush sizes - mimic artistic styles - compare digital and 'paper' images - evaluate own work - state preferences.	- match a command to an outcome - predict the outcome of a command on a device - run a command on a device - follow an instruction - give directions - program forwards and backwards commands - predict the outcome of a sequence - experiment with turn and move commands to move a robot - plan a sequence with up to four commands - debug a program - plan a program to solve a problem
Lesson Sequence	**L1:** To know what "technology" is. **L2:** To know what the main part of a computer are. **L3:** To know how to use a mouse. **L4:** To know that a keyboard can be used to type **L5:** To know how to use a keyboard to edit **L6:** To know the school rules for using technology responsibly.	**L1:** To know what freehand tools are. **L2:** To know what freehand tools can do. **L3:** To know which tools should be used for which effect. **L4:** To know how to choose and edit colours **L5:** To know how to use digital tools to create a picture **L6:** To know what the differences are between a digital and a 'paper' drawing.	**L1:** To know what a command is. **L2:** To know how to give directions. **L3:** To know that combined commands make a sequence. **L4:** To know what direction commands are. **L5:** To know how to plan a simple program. **L6:** To know that problems may have more than one solution.
Vocabulary	technology login switch mouse keyboard screen file keys delete edit arrow cursor open user agreement safe healthy password save	digital paint tool line shape colour artist edit freehand brush style compare create evaluate	computer- program programming command robot predict debug test run device algorithm

Knowledge Capture Task	**Children to open, edit (additions and deletions) and save a prepared file.**	**Children to use a computer to paint their own picture.**	**Children to plan a simple program that they predict the outcome of. They will test and debug it.**
NC Computing End Points	● Recognise common uses of information technology beyond school ● Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ● Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	● Use technology 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 predict the behaviour of simple programs ● Recognise common uses of information technology beyond school
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**English** **Phonics** **Online Safety:** Copyright and ownership. Health, wellbeing and lifestyle	**Art & Design**	**English**: writing simple instructions
Enhancements			
Prior Learning links	The Prime and Specific areas of learning in EYFS lay the foundations for all learning in KS2. The EYFS Lead and Year 1 class teacher will have had a thorough hand over as part of SASJ transition arrangements. This will include the elements of computational thinking that the EYFS curriculum lends itself to allowing the class teacher to have a clear idea of starting points in this subject.	The Prime and Specific areas of learning in EYFS lay the foundations for all learning in KS2. The EYFS Lead and Year 1 class teacher will have had a thorough hand over as part of SASJ transition arrangements. This will include the elements of computational thinking that the EYFS curriculum lends itself to allowing the class teacher to have a clear idea of starting points in this subject.	The Prime and Specific areas of learning in EYFS lay the foundations for all learning in KS2. The EYFS Lead and Year 1 class teacher will have had a thorough hand over as part of SASJ transition arrangements. This will include the elements of computational thinking that the EYFS curriculum lends itself to allowing the class teacher to have a clear idea of starting points in this subject.

	Spring 2	Summer 1	Summer 2
Year 1	**How can we organise information?** **On completion of the unit, pupils will know…** • what data is • what information is. • why labelling, grouping, and searching are important aspects of data and information. • that searching is a common operation in many applications. • that to search data, it must have labels. • how computers are able to group and present data	**How can a computer help us to write?** **On completion of the unit, pupils will know…** • how to use a computer to create and manipulate text. • how to use a keyboard to enter and remove text. • how to use a mouse to enter and remove text. • how to change the look of their text. • why they might want to manipulate the way text looks. • the differences between using a computer to create text and writing text on paper. • which method they prefer and explain their reasoning for choosing this.	**Can a computer be given instructions?** **On completion of the unit, pupils will know…** • what on-screen programming looks like (ScratchJr). • the way a project looks can be manipulated through use of sprites and backgrounds. • how to use programming blocks to use, modify, and create programs. • the early stages of program design through the introduction of algorithms. **B**
Key Skills	- label an object - label groups of objects - match objects to groups - count a group of objects - count objects - group objects - describe an object in different ways - identify the properties of an object - count objects with shared properties - group objects in different ways - group similar objects - choose how to group objects - record the number of objects in a group - compare groups of objects - decide how to group objects to answer a question - record and share findings	- identify and find keys on a keyboard - open a word processor - recognise keys on a keyboard - enter text into a computer - use backspace to remove text - use letter, number, and space keys - explain what the keys learnt about already do - identify the toolbar and use bold, italic, and underline - type capital letter - change the font - select all of the text by clicking and dragging - select a word by double-clicking - decide if changes have improved writing - say what tool was used to change the text - use 'undo' to remove changes - explain the differences between typing and writing - make changes to text on a computer - I can say why I prefer typing or writing	- compare different programming tools - find which commands to move a sprite - use commands to move a sprit - run my program - use a Start block in a program - use more than one block by joining them together - change the value - find blocks that have numbers - say what happens when I change a value - add blocks to each of my sprites - delete a sprite - show that a project can include more than one sprite - choose appropriate artwork for my project - create an algorithm for each sprite - decide how each sprite will move - add programming blocks based on my algorithm - test the programs I have created - use sprites that match my design
Lesson Sequence	**L1:** To know that objects can be labelled **L2:** To know that objects can be counted **L3:** To know that properties can be used to describe objects. **L4:** To know that objects can be organised and counted according to their properties. **L5:** To know that groups of objects can be compared **L6:** To know that organised groups can allow questions to be answered.	**L1:** To know that a computer can be used to write text. **L2:** To know how to add and remove text on a computer. **L3:** To know that the look of a text can be changed. **L4:** To know what the impact of changing the look of text can be. **L5:** To know how changes to a text can be undone. **L6:** To know how typing and writing compare.	**L1:** To know that a command can fulfil a given purpose. **L2:** To know that sets of commands can be joined together. **L3:** To know what the effect of changing a value is. **L4:** To know that each sprite has its own instructions **L5:** To know that a project design is broken into parts. **L6:** To know algorithms create programs

Vocabulary	data information label group search object properties compare record similar different count	word processor keyboard keys letters type numbers space backspace text cursor capital letters toolbar bold italic underline mouse select font undo redo format compare typing writing	ScratchJr command sprite compare programming area block joining start run program background delete reset algorithm predict effect change value instructions design
Knowledge Capture Task	**Children to group objects to answer questions.**	**What can I write all by myself?**	**Create a program**
NC Computing End Points	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully	• 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 predict the behaviour of simple programs
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	Mathematics – data handling. **Online Safety:** Copyright and ownership.	English – writing **Online Safety:** Privacy and security.	
Enhancements			
Prior Learning links	The Prime and Specific areas of learning in EYFS lay the foundations for all learning in KS2. The EYFS Lead and Year 1 class teacher will have had a thorough hand over as part of SASJ transition arrangements. This will include the elements of computational thinking that the EYFS curriculum lends itself to allowing the class teacher to have a clear idea of starting points in this subject.	**Year 1** How can we paint using computers?	**Year 1** Can a robot be given instructions?

	Autumn 1	Autumn 2	Spring 1
Year 2	**What is IT?** **On completion of the unit, pupils will know…** • what information technology (IT) • some examples of what IT is • where they have seen IT in school and beyond, in settings such as shops, hospitals, and libraries. • how IT improves our world • about the importance of using IT responsibly.	**What makes a good photograph?** **On completion of the unit, pupils will know…** • that different devices can be used to capture photographs • how to capture photos • how to edit photos • how to improve photos • that images they see may not be real.	**Can you send a robot on a journey?** **On completion of the unit, pupils will know…** • how to give instructions in sequences • that the use of logical reasoning can predict outcomes. • how to give commands in different orders. • how the order affects the outcome. • about design in programming. • how to develop artwork and test it for use in a program. • how to design algorithms and then test those algorithms as programs and debug
Key Skills	- describe some uses of computers - identify examples of computers - identify that a computer is a part of IT - identify examples of IT - identify that some IT can be used in more than one way - sort school IT by what it's used for - find examples of information technology - sort IT by where it is found - talk about uses of information technology - demonstrate how IT devices work together - recognise common types of technology - say why we use IT - list different uses of information technology - say how rules can help keep me safe - talk about different rules for using IT - explain the need to use IT in different ways - identify the choices that I make when using IT - use IT for different types of activities	- explain what I did to capture a digital photo - recognise what devices can be used to take photographs - how to take a photograph - explain the process of taking a good photograph - explain why a photo looks better in portrait or landscape format - take photos in both landscape and portrait format - discuss how to take a good photograph - identify what is wrong with a photograph - improve a photograph by retaking it - experiment with different light sources - explain why a picture may be unclear - explore the effect that light has on a photo - recognise that images can be changed - use a tool to achieve a desired effect - apply a range of photography skills to capture a photo - identify which photos are real and which have been changed - recognise which photos have been changed	- choose a series of words that can be enacted as a sequence - follow instructions given by someone else - give clear instructions - show the difference in outcomes between two sequences that consist of the same commands - use an algorithm to program a sequence on a floor robot - use the same instructions to create different algorithms - compare my prediction to the program outcome - follow a sequence - predict the outcome of a sequence - explain the choices I made for my mat design - identify different routes around my mat - test my mat to make sure that it is usable - create an algorithm to meet my goal - explain what my algorithm should achieve - use my algorithm to create a program - plan algorithms for different parts of a task - put together the different parts of my program - test and debug each part of the program"
Lesson Sequence	**L1:** To know the uses and features of information technology **L2:** To know the uses of information technology in our school **L3:** To know information technology beyond school **L4:** To know how information technology helps us **L5:** To know how to use information technology safely **L6:** To know that choices are made when using information technology	**L1:** To know that a digital device can take a photograph **L2:** To know how to make choices when taking a photograph **L3:** To know what makes a good photograph **L4:** To know how photographs can be improved **L5:** To know how to how photographs can be improved **L6:** To know that photos can be changed	**L1:** To know that a series of instructions is described as a sequence **L2:** To know what happens when we change the order of instructions **L3:** To know how to use logical reasoning to predict the outcome of a program **L4:** To know that programming projects can have code and artwork **L5:** To know how to design an algorithm **L6:** To know how to create and debug a program

Vocabulary	Information technology (IT) computer barcode scanner/scan	device camera photograph capture image digital landscape portrait framing subject compose light sources flash focus background editing filter format framing lighting	instruction sequence clear unambiguous algorithm program order prediction artwork design route mat debugging decomposition
Knowledge Capture Task	**Digital 5 a day.** **Variety is good for you.**	**Real or not real?** **Learning review.**	**Debugging**
NC Computing End Points	● Use technology purposefully to create, organise, store, manipulate, and retrieve digital content ● Recognise common uses of information technology beyond school ● 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 ● Recognise common uses of information technology beyond school ● Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	● Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions ● Create and debug simple programs ● Use logical reasoning to predict the behaviour of simple programs
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Online Safety:** Health, wellbeing and lifestyle	**Online Safety:** Self-Image and Identity **Art and design** ● To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space	
Enhancements			
Prior Learning links	**Year 1** What is technology?	**Year 1** How can a computer help us write?	**Year 1** Can a computer give instructions?

	Spring 2	Summer 1	Summer 2
Year 2	**What is a pictogram?** **On completion of the unit, pupils will know…** • what the term data means • how data can be collected in the form of a tally chart • the term 'attribute' • how to use attributes to help them organise data • how to presenti data in the form of pictograms and finally block diagrams.	**Can a computer be musical?** **On completion of the unit, pupils will know…** • how to use a computer to create music. • how music can make them think and feel. • how to compare creating music digitally and non-digitally. • to look patterns in music • how to purposefully create music.	**Are programs predictable?** **On completion of the unit, pupils will know…** that sequences of commands have an outcome to make predictions based on their learning to use and modify designs to create their own quiz questions how to use blocks of code
Key Skills	- compare totals in a tally chart - record data in a tally chart - represent a tally count as a total - enter data onto a computer - use a computer to view data in a different format - use pictograms to answer simple questions about objects - explain what the pictogram shows - organise data in a tally chart - use a tally chart to create a pictogram - answer 'more than'/'less than' and 'most/least' questions about an attribute - create a pictogram to arrange objects by an attribute - tally objects using a common attribute - choose a suitable attribute to compare people - collect the data I need - create a pictogram and draw conclusions from it - give simple examples of why information should not be shared - share what I have found out using a computer - use a computer program to present information in different ways	- describe music using adjectives - identify simple differences in pieces of music - say what I do and don't like about a piece of music - create a rhythm pattern - explain that music is created and played by humans - play an instrument following a rhythm pattern - connect images with sounds - relate an idea to a piece of music - use a computer to experiment with pitch - explain how my music can be played in different ways - identify that music is a sequence of notes - refine my musical pattern on a computer - add a sequence of notes to my rhythm - create a rhythm which represents an animal I've chosen - create my animal's rhythm on a computer - explain how I changed my work - listen to music and describe how it makes me feel - review my work	- identify that a program needs to be started - identify the start of a sequence - show how to run my program - change the outcome of a sequence of commands - match two sequences with the same outcome - predict the outcome of a sequence of commands - build the sequences of blocks I need - decide which blocks to use to meet the design - work out the actions of a sprite in an algorithm - choose backgrounds for the design - choose characters for the design - create a program based on the new design - build sequences of blocks to match my design - choose the images for my own design - create an algorithm - compare my project to my design - debug my program - improve my project by adding features
Lesson Sequence	**L1:** To know that we can count and compare objects using tally charts **L2:** To know that objects can be represented as pictures **L3:** To know how to create a pictogram **L4:** To know how to select objects by attribute and make comparisons **L5:** To know that people can be described by attributes **L6:** To know that we can present information using a computer	**L1:** To know how music can make us feel **L2:** To know that there are patterns in music **L3:** To know how to experiment with sound using a computer **L4:** To know how to use a computer to create a musical pattern **L5:** To know that music can be created for a purpose **L6:** To know how to review and refine our computer work	**L1:** To know that a sequence of commands has a start **L2:** To know that a sequence of commands has an outcome **L3:** To know how to create a program using a given design **L4:** To know how to change a given design **L5:** To know how to create a program using my own design **L6:** To know how a project can be improved

Vocabulary	more than less than most least common popular organise data object tally chart votes total pictogram enter data compare objects count explain attribute group same different conclusion block diagram sharing	music quiet loud feelings emotions pattern rhythm pulse pitch tempo rhythm notes create emotion beat instrument open edit	sequence command program run start outcome predict blocks design actions sprite project modify change algorithm build match compare debug features evaluate decomposition code
Knowledge Capture Task	**Can I use a pictogram to answer questions?**	**Review and edit music**	**Can I code?**
NC Computing End Points	• 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 predict the behaviour of simple programs • Use technology purposefully to create, organise, store, manipulate and retrieve digital content
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, pre-teaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Online Safety:** Self Image & Identity Health, wellbeing & lifestyle Privacy & Security **Maths** • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: 'equal to', 'more than', 'less than' ('fewer'), 'most', 'least' • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data	**Online Safety:** Copyright and ownership **Music** • Play tuned and untuned instruments musically • Listen with concentration and understanding to a range of high-quality live and recorded music • Experiment with, create, select, and combine sounds using the interrelated dimensions of music	
Enhancements			
Prior Learning links	**Year 1** How can we organise information?	**Year 2** What makes a good photograph?	**Year 2** Can you send a robot on a journey?

	Autumn 1	Autumn 2	Spring 1
Year 3	**How are computers connected?** **On completion of the unit, pupils will know…** • how digital devices function • what in input devices are • what output devices are • how digital devices can change the way we work • how a computer network can be used to share information • why we need a network switch • how digital devices can be connected • the role of a switch, server, and wireless access point in a network	**How does stop-frame animation work?** **On completion of the unit, pupils will know…** • that animation is a sequence of drawings or photographs • that animated movement is a sequence of images • why little changes are needed for each frame • what a story board is • why a story board is needed • how to plan an animation • what onion skinning is • what different animation media are • how to create a final film	**Can I write a program?** **On completion of the unit, pupils will know…** • that programming environments can differ • that objects in Scratch have attributes (linked to) • that commands in Scratch are represented as blocks • that commands have an outcome • that a program has a start • that a sequence of commands can have an order • how to change the appearance of my project • how to create a project from a task description **A**
Key Skills	- to follow a process - classify input and output devices - describe a simple process - design a digital device - recognise similarities and differences between using digital devices and non-digital tools - recognise different connections - demonstrate how information can be passed between devices - identify networked devices around me - identify the benefits of computer networks	- create an effective stop-frame animation - predict what an animation will look like - break down a story into settings, characters and events - create a storyboard - evaluate the quality of animation - review a sequence of frames to check work - use onion skinning to help me make small changes between frames - evaluate another learner's animation - explore ways to make my animation better - improve my animation based on feedback evaluate final film	- identify the objects in a Scratch project (sprites, backdrops) - choose a word which describes an on-screen action for their plan - create a program following a design - identify that each sprite is controlled by the commands chosen - create a sequence of connected commands - explain that the objects in my project will respond exactly to the code - start a program in different ways - combine sound commands - explain what a sequence is - order notes into a sequence - build a sequence of commands - decide the actions for each sprite in a program - make design choices for my artwork - identify and name the objects I will need for a project - implement my algorithm as code - relate a task description to a design
Lesson Sequence	**L1:** To know how a digital device works **L2:** To know what parts make up a digital device **L3:** To know how digital devices help us **L4:** To know how messages are passed through multiple connections and why we need a network switch **L5:** To know how computers are connected **L6:** To know what our school network looks like	**L1:** To know animation is a sequence of drawings or photographs **L2:** To know that animated movement is related to a sequence of images **L3:** To know how to create a story board **L4:** To know why it is important to work consistently and carefully **L5:** To know how an animation can be improved **L6:** To know how other media can be added to an animation	**L1:** To know what Scratch is. **L2:** To know how to program a sprite **L3:** To know what a sequence is and how it works **L4:** To know how to order commands **L5:** To know ho to make a project appeal to its user **L6:** To know how to create a musical instrument in Scratch.

Vocabulary	digital devices input output processes computer network infrastructure wireless access point switches connecting network server	stop-frame animation editing media	programming project attributes blocks command outcome sprite control code object sequence algorithm design
Knowledge Capture Task	**Complete the summative assessment**	**Create final film.**	**Making an instrument**
NC Computing End Points	• use sequence, selection, and repetition in programs; work with variables and various forms of input and output • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration • 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 • 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
Possible Endpoints and support for the least able	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Maths:** Number and place value: solve number problems and practical problems involving these ideas. **Art:** to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]	**English: p**upils should be taught to: draft and write by: in narratives, creating settings, characters and plot Pupils should be taught to: proof-read for spelling and punctuation errors **History:** The Roman Empire and its impact on Britain **Online Safety:** Managing Online Information, Copyright and ownership	**Music:**
Enhancements			
Prior Learning links	**Year 2** What is IT?	**Year 2** Can a computer be musical?	**Year 2** Are programmes predictable?

	Spring 2	Summer 1	Summer 2
Year 3	**What is a branching database?** **On completion of the unit, pupils will know…** • how to create questions with yes/no answers • the attributes needed to collect data about an object • what a branching datatbase is • how to create a branching database • why it is helpful for a database to be well structured • how to independently create an identification tool	**How can my work be published?** **On completion of the unit, pupils will know…** • how text and images convey information • that text and layout can be edited • how to choose appropriate page settings • that content can be added to a desktop publishing publication • how different layouts can suit different purposes • what the benefits of desktop publishing might be	**Can I debug a program?** **On completion of the unit, pupils will know…** • how a sprite moves in an existing project • how to create a program to move a sprite in four directions • the relationship between an event and an action • how to *adapt* a program to a new context • how to *develop* a program by adding features • how to identify and fix bugs in a program
Key Skills	- create two groups or objects separated by one attribute - investigate questions with yes/no answers - arrange objects into a tree structure - create a group of objects within an existing group - select an attribute to separate objects into groups - select objects to arrange into a branching database - test the database to see if it works - compare two branching database structures - use given attributes - create a physical version of a branching database - create questions to uniquely identify objects - create questions to use in a branching database - suggest real world uses	- identify the advantages and disadvantages of using text and images - change font style, size, and colours for a given purpose - edit text - create a template for a particular purpose - define the term 'page orientation' - recognise placeholders and say why they are important - choose the best locations for content - make changes to content after I've added it - paste text and images to create a magazine cover - choose a suitable layout for a given purpose - identify different layouts and match a layout to a purpose - compare work made on desktop publishing to work created by hand - identify the uses of desktop publishing in the real world	- choose which keys to use for actions and explain my choices - choose which keys to use for actions and explain my choices - identify a way to improve a program - choose a character for my project - choose a suitable size for a character in a maze - program movement - choose blocks to set up my program - consider the real world when making design choices - use a programming extension - build more sequences of commands to make my design work - choose suitable keys to turn on additional features - identify additional features (from a given set of blocks) - match a piece of code to an outcome - modify a program using a design - test a program against a given design - make design choices and justify them
Lesson Sequence	**L1:** To know what closed questions are and how to use them. **L2:** To know how to create a group **L3:** To know how to use an online database tool to arrange objects into a branching database **L4:** To know why it is helpful for a database to be well structured **L5:** To know how to plan the structure of a branching database **L6:** To know how to independently create an identification tool	**L1:** To know how text and images convey information **L2:** To know that text and layout can be edited **L3:** To know how to choose appropriate page settings **L4:** To know ways in which to add content to a desktop publishing publication **L5:** To know how different layouts can suit different purposes **L6:** To know the benefits of desktop publishing	**L1:** To know how a sprite moves in an existing project **L2:** To know how create a program to move a sprite in four directions **L3:** To know to adapt a program to a new context **L4:** To know how to add features **L5:** To know how to identify and fix bugs in a program **L6:** To know how to design and create a maze-based challenge

Vocabulary	questions answers data database structure identification tool attribute arrange group	text image template edit font style size colour purpose impact page orientation placeholder location layout desktop publish	directions event action adapt develop fix bugs improve keys features code outcome test
Knowledge Capture Task	**Create a branching database**	**Create your own published work**	**Design and create a maze-based challenge**
NC Computing End Points	• 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	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Science:** **Maths:**	**English:** to draft and write by: in non-narrative material, using simple organisational devices [for example, headings and subheadings] • Evaluate and edit by assessing the effectiveness of their own and others' writing and suggesting improvements • Proofread for spelling and punctuation errors **Online Safety:** Managing online information & Copyright and ownership	**Design and Technology:**
Enhancements			
Prior Learning links	**Year 2** What is a pictogram?	**Year 3** How does stop-frame animation work?	**Year 3** Can I write a programme?

	Autumn 1	Autumn 2	Spring 1
Year 4	**What is the internet?** **On completion of the unit, pupils will know…** • how networks physically connect to other networks • how networked devices make up the internet • why a network needs protecting • how websites can be shared via the World Wide Web (WWW) • how content can be added and accessed on the World Wide Web (WWW) • how the content of the WWW is created by people • the potential consequences of unreliable content	**How can sounds be recorded and edited?** **On completion of the unit, pupils will know…** • that sound can be recorded • that audio recordings can be edited • the different parts of creating a podcast project • how to apply audio editing skills independently • how to combine audio to enhance their podcast project	**What happens when a program repeats?** **On completion of the unit, pupils will know…** • how to plan commands to create shapes and patterns • how to modify commands to create shapes and patterns • how to test commands to create shapes and patterns. • how to Logo, a text-based programming language.
Key Skills	- describe the internet as a network of networks - discuss why a network needs protecting - describe networked devices and how they connect - explain that the internet is used to provide many services - recognise that the World Wide Web contains websites and web pages - describe how to access websites on the WWW - describe where websites are stored when uploaded to the WWW - explain the types of media that can be shared on the WWW - explain that internet services can be used to create content online - explain what media can be found on websites - recognise that I can add content to the WWW - explain that there are rules to protect content - explain that websites and their content are created by people - suggest who owns the content on websites - explain that not everything on the World Wide Web is true - 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	- identify the input and output devices used to record and play sound - use a computer to record audio - discuss what sounds can be added to a podcast - inspect the soundwave view to know where to trim my recording - re-record my voice to improve my recording - explain how sounds can be combined to make a podcast more engaging - plan appropriate content for a podcast - save my project so the different parts remain editable - improve voice recordings - record content following my plan - review the quality of my recordings - arrange multiple sounds to create the effect I want - explain the difference between saving a project and exporting an audio file - open a project to continue working on it - choose appropriate edits to improve my podcast - listen to an audio recording to identify its strengths - suggest improvements to an audio recording	- create a code snippet for a given purpose - explain the effect of changing a value of a command - program a computer by typing commands - test my algorithm in a text-based language - use a template to create a design for my program - write an algorithm to produce a given outcome - identify everyday tasks that include repetition as part of a sequence, *e.g. brushing teeth, dance moves* - identify patterns in a sequence - use a count-controlled loop to produce a given outcome - choose which values to change in a loop - identify the effect of changing the number of times a task is repeated - predict the outcome of a program containing a count-controlled loop - explain that a computer can repeatedly call a procedure - identify 'chunks' of actions in the real world - use a procedure in a program - design a program that includes count-controlled loops - develop my program by debugging it - make use of my design to write a program
Lesson Sequence	**L1:** To know how networks physically connect to other networks **L2:** To know how networked devices make up the internet **L3:** To know how websites can be shared via the World Wide Web (WWW) **L4:** To know how content can be added and accessed on the World Wide Web (WWW) **L5:** To know how the content of the WWW is created by people **L6:** To know the possible consequences of unreliable content	**L1:** To know that sound can be recorded **L2:** To know that audio recordings can be edited **L3:** To know the different parts of creating a podcast project **L4:** To know how to apply audio editing skills independently **L5:** To know how to combine audio to enhance my podcast project **L6:** To know how a podcast could be improved.	**L1:** To know that accuracy in programming is important **L2:** To know how to create a program in a text-based language **L3:** To know what 'repeat' means **L4:** To know how to modify a count-controlled loop to produce a given outcome **L5:** To know to decompose a task into small steps **L6:** To create a program that uses count-controlled loops to produce a given outcome

Vocabulary	network connect physically internet protection network content access services uploaded media rule website share reshare honest accurate legal	input output devices record audio sound soundwave re-record combine engage quality file exporting effect	image edit digital crop rotate undo save adjustments effects colours hue saturation sepia vignette image retouch clone select combine made up composite cut copy paste alter background foreground zoom undo font
Knowledge Capture Task	**Summative Assessment Quiz**	**Evaluate the effective use of audio**	**Create a program that uses count-controlled loops to produce a given outcome**
NC Computing End Points	● Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration ● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● 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.	● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● 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 ● 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Online Safety:** Managing online information	**Science** ● Sound: Find patterns between the volume of a sound and the strength of the vibrations that produced it ● Sound: Recognise that sounds get fainter as the distance from the sound source increases **English** – Years 3 and 4 ● Writing – composition: Plan their writing by discussing and recording ideas ● Writing – draft and write by: In non-narrative material, using simple organisational devices **Online Safety:** Copyright and ownership.	
Enhancements			
Prior Learning links	**Year 3** How are computers connected?	**Year 3** How can my work be published?	**Year 3** Can I debug a programme?

	Spring 2	Summer 1	Summer 2
Year 4	**How does data logging work?** **On completion of the unit, pupils will know…** • the senses that humans use to experience the environment • how computers can use special input devices called sensors to monitor the environment • how to collect data • how toaccess data captured over long periods of time. • what data points, data sets, and logging intervals are. • how to use a computer to review and analyse data..	**How can photographs be edited?** **On completion of the unit, pupils will know…** • how digital images can be changed and edited • how they can then be resaved and reused • the impact that editing images can have • how to evaluate the effectiveness of their choices	**What happens when a program repeats?** **On completion of the unit, pupils will know…** • the concept of repetition in programming • similarities between two environments. • the difference between count-controlled and infinite loops • how to modify existing animations and games using repetition.
Key Skills	- choose a data set to answer a given question - identify data that can be gathered over time - suggest questions that can be answered using a given data set - explain what data can be collected using sensors - identify that data from sensors can be recorded - use data from a sensor to answer a given question - identify the intervals used to collect data - recognise that a data logger collects data at given points - sort data to find information - view data at different levels of detail - plan how to collect data using a data logger - propose a question that can be answered using logged data - use a data logger to collect data - draw conclusions from the data that I have collected - explain the benefits of using a data logger - interpret data that has been collected using a data logger	- explain why I might crop an image - improve an image by rotating it - use photo editing software to crop an image - experiment with different colour effects - explain that different colour effects make you think and feel different things - explain why I chose certain colour effects - add to the composition of an image by cloning - identify how a photo edit can be improved - remove parts of an image using cloning - experiment with tools to select and copy part of an image - explain why photos might be edited - use a range of tools to copy between images - choose suitable images for my project - create a project that is a combination of other images - describe the image I want to create	- list an everyday task as a set of instructions including repetition - modify a snippet of code to create a given outcome - predict the outcome of a snippet of code - choose when to use a count-controlled and an infinite loop - modify loops to produce a given outcome - recognise that some programming languages enable more than one process to be run at once - choose which action will be repeated for each object - evaluate the effectiveness of the repeated sequences used in my program - explain what the outcome of the repeated action should be - explain the effect of my changes - identify which parts of a loop can be changed - re-use existing code snippets on new sprites - develop my own design explaining what my project will do - evaluate the use of repetition in a project - select key parts of a given project to use in my own design - build a program that follows my design - evaluate the steps I followed when building my project - refine the algorithm in my design
Lesson Sequence	**L1:** To know that data gathered over time can be used to answer questions **L2:** To know how to use a digital device to collect data automatically **L3:** To know that a data logger collects 'data points' from sensors over time **L4:** To know how a computer can help us analyse data **L5:** To know how to identify the data needed to answer questions **L6:** To know how to use data from sensors to answer question	**L1:** To know that the composition of digital images can be changed **L2:** To know that colours can be changed in digital images **L3:** To know how cloning can be used in photo editing **L4:** To know that images can be combined **L5:** To know how to combine images for a purpose **L6:** To know how to evaluate how changes can improve an image	**L1:** To know how to develop the use of count-controlled loops in a different programming environment **L2:** To know that in programming there are infinite loops and count controlled loops **L3:** To know how to develop a design that includes two or more loops which run at the same time **L4:** To know how to modify an infinite loop in a given program **L5:** To design a project that includes repetition **L6:** To create a project that includes repetition

Vocabulary	data table layout input device sensor logger logging data point interval analyse dataset import export logged collection review conclusion	Logo (programming environment) program turtle commands code snippet algorithm design debug pattern repeat repetition count-controlled loop value trace decompose procedure	Scratch programming sprite blocks code loop repeat value infinite loop count-controlled loop costume repetition forever animate event block duplicate modify design algorithm debug refine evaluate
Knowledge Capture Task	**Teacher Rubric**	**Make your own publication**	**Design and create a game which uses repetition, applying stages of programming design throughout.**
NC Computing End Points	• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, 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 • 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Science** • Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. • They should learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.	**Online Safety:** - Copyright and ownership - Self-image and identity	
Enhancements			
Prior Learning links	**Year 3** What is a branching database?	**Year 4** How can sounds be recorded and edited?	**Year 4** What happens when a programme repeats? *(Spring 1)*

	Autumn 1	Autumn 2	Spring 1
Year 5	**How can systems help us search?** **On completion of the unit, pupils will know…** • that computers can be connected together to form systems • the role of computer systems in our lives • how to experiment with search engines • how search engines select results • why the order of results is important, and to whom	**How can videos be shot and edited?** **On completion of the unit, pupils will know…** • what makes a video effective • digital devices that can record video • how to capture video using a range of techniques • how to create a storyboard • that video can be improved through reshooting and editing • the impact of the choices made when making and sharing a video	**What is physical computing?** **On completion of the unit, pupils will know…** • what a microcontroller (Crumble controller) is • how to connect and program it to control components (including output devices — LEDs and motors). • conditions as a means of controlling the flow of actions in a program. • how to use their knowledge of repetition and conditions when introduced to the concept of selection (through the 'if...then...' structure) • how to write algorithms and programs that utilise this concept.
Key Skills	-describe that a computer system features inputs, processes, and outputs - explain that computer systems communicate with other devices - explain that systems are built using a number of parts - explain the benefits of a given computer system - identify tasks that are managed by computer systems - identify the human elements of a computer system - compare results from different search engines - make use of a web search to find specific information - refine a web search - explain why we need tools to find things online - recognise the role of web crawlers in creating an index - relate a search term to the search engine's index - explain that a search engine follows rules to rank results - give examples of criteria used by search engines to rank results - order a list by rank - describe some of the ways that search results can be influenced - explain how search engines make money - recognise some of the limitations of search engines	- compare features in different videos - explain that video is a visual media format - identify features of videos - experiment with different camera angles - identify and find features on a digital video recording device - make use of a microphone - capture video using a range of filming techniques - review how effective my video is - suggest filming techniques for a given purpose - create and save video content - decide which filming techniques I will use - outline the scenes of my video - explain how to improve a video by reshooting and editing - select the correct tools to make edits to my video - store, retrieve, and export a recording to a computer - evaluate my video and share my opinions - make edits to my video and improve the final outcome - recognise that my choices when making a video will impact on the quality of the final outcome	- create a simple circuit and connect it to a microcontroller - explain what an infinite loop does - program a microcontroller to make an LED switch on - connect more than one output component to a microcontroller - design sequences that use count-controlled loops - use a count-controlled loop to control outputs - design a conditional loop - explain that a condition is either true or false - program a microcontroller to respond to an input - explain that a condition being met can start an action - identify a condition and an action in my project - use selection (an 'if…then…' statement) to direct the flow of a program - create a detailed drawing of my project - identify a real-world example of a condition starting an action - test and debug a program - use selection to produce an intended outcome
Lesson Sequence	**L1:** To know that computers can be connected together to form systems **L2:** To know the role of computer systems in our lives **L3:** To know how to use a search engine **L4:** To know how search engines select results **L5:** To know how search results are ranked **L6:** To know why the order of results is important, and to whom	**L1:** To know what makes a video effective **L2:** To know how to use a digital device to record video **L3:** To know a range of techniques to capture video **L4:** To know how to create a story board **L5:** To know how to plan, create and save a video **L6:** To know that video can be improved through reshooting and editing	**L1:** To know how to control a simple circuit connected to a computer **L2:** To know how to write a program that includes count-controlled loops **L3:** To know how to explain that a loop can stop when a condition is met **L4:** To know that a loop can be used to repeatedly check whether a condition has been met **L5:** To know how to design a physical project that includes selection **L6:** To know how to create a program that controls a physical computing project

Vocabulary	connected systems search search engine results ranking input output process communicate refine web crawler index influenced limitations	effective record capture techniques storyboard reshoot edit impact effective scenes create save store retrieve export	video audio camera talking head panning close up video camera microphone lens mid-range long shot moving subject side by side angle (high, low, normal) static zoom pan tilt storyboard filming review import split trim clip edit reshoot delete reorder export evaluate share
Knowledge Capture Task	**Searches Quiz**	**Make and edit a video**	**Design and make a working model of a fairground carousel that will demonstrate their understanding of how the microcontroller and its components are connected, and how selection can be used to control the operation of the model.**
NC Computing End Points	• Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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 • 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Online Safety:** Copyright and ownership	**Online Safety:** - Managing online information - Online relationships - Online reputation - Self-image and identity	**Science – Electricity (LKS2)** • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches, and buzzers **Design and Technology (Key stage 2)** Design • Generate, develop, model, and communicate their ideas. Make • Select from and use a wider range of tools and equipment to perform practical tasks accurately • Select from and use a wider range of materials and components according to their functional properties and aesthetic qualities Evaluate • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Technical knowledge • Understand and use electrical systems in their products • Apply their understanding of computing to program, monitor, and control their products
Enhancements			
Prior Learning links	**Year 4** What is the internet?	**Year 4** How can videos be shot and edited?	**Year 4** What happens when a program repeats?

	Spring 2	Summer 1	Summer 2
Year 5	**What are flat-file databases?** **On completion of the unit, pupils will know…** • how a flat-file database can be used to organise data in records. • how to use tools within a database to order and answer questions about data. • how to create graphs and charts from their data to help solve problems. • how to use a real-life database to answer a question, and present their work to others.	**How can we use vector graphics?** **On completion of the unit, pupils will know…** to create vector drawings. that different drawing tools can help them create images that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. how to layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work.	**Can you use selection in a program?** **On completion of the unit, pupils will know…** - how 'conditions' can be used in programming - learning how the 'if… then… else...' structure can be used to select different outcomes depending on whether a condition is 'true' or 'false' - how to represent this understanding in algorithms, and then by constructing programs in the Scratch programming environment. - how to write programs that ask questions - how to use selection to control the outcomes based on the answers given..
Key Skills	- create a database using cards - explain how information can be recorded - order, sort, and group my data cards - choose which field to sort data by to answer a given question - explain what a field and a record is in a database - navigate a flat-file database to compare different views of information - combine grouping and sorting to answer specific questions - explain that data can be grouped using chosen values - group information using a database - choose multiple criteria to answer a given question - choose which field and value are required to answer a given question - outline how 'AND' and 'OR' can be used to refine data selection - explain the benefits of using a computer to create charts - refine a chart by selecting a particular filter - select an appropriate chart to visually compare data - ask questions that will need more than one field to answer - present my findings to a group - refine a search in a real-world context	- discuss how vector drawings are different from paper-based drawings - experiment with the shape and line tools - recognise that vector drawings are made using shapes - explain that each element added to a vector drawing is an object - identify the shapes used to make a vector drawing - move, resize, and rotate objects - use alignment grids and resize handles to improve consistency - modify objects to create a new image - use the zoom tool to help me add detail to my drawings - change the order of layers in a vector drawing - identify that each added object creates a new layer in the drawing - use layering to create an image - copy part of a drawing by duplicating several objects - reuse a group of objects to further develop my vector drawing	- identify conditions in a program - modify a condition in a program - recall how conditions are used in selection - create a program with different outcomes using selection - identify the condition and outcomes in an 'if... then… else...' statement - use selection in an infinite loop to check a condition - design the flow of a program which contains 'if… then… else…' - explain that program flow can branch according to a condition - show that a condition can direct program flow in one of two ways - identify the outcome of user input in an algorithm - test a program - identify the setup code needed in a program - identify ways the program could be improved
Lesson Sequence	**L1:** To know how to use a form to record information **L2:** To know how to compare paper and computer-based databases **L3:** To know how to outline how you can answer questions by grouping and then sorting data **L4:** To know how to explain that tools can be used to select specific data **L5:** To know how to explain that computer programs can be used to compare data visually **L6:** To know how to use a real-world database to answer question	**L1:** To know that drawing tools can be used to produce different outcomes **L2:** To know how to create a vector drawing by combining shapes **L3:** To know how to use tools to achieve a desired effect **L4:** To know that vector drawings consist of layers **L5:** To know how to group objects to make them easier to work with **L6:** To know how to apply what I have learned about vector drawings	**L1:** To know how selection is used in computer programs **L2:** To know that a conditional statement connects a condition to an outcome **L3:** To know how selection directs the flow of a program **L4:** To know how to design a program which uses selection **L5:** To know how to create a program which uses selection **L6:** To know how to evaluate a program

Vocabulary	attribute value questions table objects branching database objects equal even separate structure compare order organise selecting information decision tree	Scratch programming blocks commands code sprite costume stage backdrop motion turn point in direction go to glide sequence event task design run the code order note chord algorithm bug debug code	motion event sprite algorithm logic move resize extension block pen set up design action debugging errors setup code test debug actions
Knowledge Capture Task	**Summative Assessment – can you answer the questions?**	**Create a vector drawing**	**Design a quiz in response to a given task and implement it as a program & evaluate it.**
NC Computing End Points	● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content ● 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.	● design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ● use sequence, selection, and repetition in programs; work with variables and various forms of input and output ● 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Maths**	**Online Safety:** Copyright and ownership	
Enhancements			
Prior Learning links	**Year 4** How does data-logging work?	**Year 5** How can videos be shot and edited?	**Year 5** What is physical computing?

	Autumn 1	Autumn 2	Spring 1
Year 6	**How can technology help us to communicate?** **On completion of the unit, pupils will know…** • how computers use addresses to access websites • that internet devices have addresses • how data is transferred across the internet • how sharing information online can help people to work together • different ways of working together online • how we communicate using technology	**How do websites work?** **On completion of the unit, pupils will know…** • how web pages can be structured • that websites are written in HTM • what copyright is and how it impacts on building web pages • how and why web pages can be previewed. • what a navigation path is • the implications of linking to content owned by other people	**What are variables and how can we use them?** **On completion of the unit, pupils will know…** • that a 'variable' is something that is changeable • that the way a variable changes can be defined • that a variable has a name and a value • why a variable is used in a program • how to improve a game by using variables • how games can be improved
Key Skills	- recognise that data is transferred using agreed methods - explain that all data transferred over the internet is in packets - identify and explain the main parts of a data packet" - explain that the internet allows different media to be shared - recognise how to access shared files stored online - send information over the internet in different ways - explain how the internet enables effective collaboration - recognise that working together on the internet can be public or private - choose methods of communication to suit particular purposes - explain the different ways in which people communicate - identify that there are a variety of ways to communicate over the internet - compare different methods of communicating on the internet - decide when I should and should not share information online - explain that communication on the internet may not be private	- explore a website - draw a web page layout that suits my purpose - recognise the common features of a web page - suggest media to include on my page - describe what is meant by the term 'fair use' - find copyright-free images - add content to my own web page - evaluate what my web page looks like on different devices and suggest/make edits - preview what my web page looks like - describe why navigation paths are useful - explain what a navigation path is - make multiple web pages and link them using hyperlinks - create hyperlinks to link to other people's work - evaluate the user experience of a website - explain the implication of linking to content owned by others	- identify examples of information that is variable - identify that variables can hold numbers or letters - identify a program variable as a placeholder in memory for a single value - recognise that the value of a variable can be changed - decide where in a program to change a variable -make use of an event in a program to set a variable - recognise that the value of a variable can be used by a program - choose the artwork for a project - create algorithms for my project - explain design choices - choose a name that identifies the role of a variable - create the artwork for my project - test the code that I have written - identify ways that my game could be improved - share my game with others - use variables to extend my game
Lesson Sequence	**L1:** To know what internet addresses are **L2:** To know how data is transferred across the internet **L3:** To know how sharing information online can help people to work together **L4:** To know how the internet enables effective collaboration **L5:** To know that there are a variety of ways to communicate over the internet **L6:** To know how to communicate responsibly.	**L1:** To know what makes a good website **L2:** To know how a web page can be laid out **L3:** To know what copyright is **L4:** To know how and why to preview pages **L5:** To know what a navigation path is and why it is needed **L6:** To know the implications of linking to content owned by other people	**L1:** To know what a variable is **L2:** To know why a variable is used in a program **L3:** To know how to improve a game by using variables **L4:** To know how to design a project that builds on a given example **L5:** To use my design to create a project **L6:** To know how my game could be improved

Vocabulary	website address media private public purpose internet online information collaboration data transfer	layout page fair use copyright content navigation path hyperlink	variable changeable defined name value placeholder memory design test code extend evaluate
Knowledge Capture Task	**Summative Assessment Quiz**	**Rubric**	**Variables Quiz**
NC Computing End Points	• 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, 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	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output • 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
Adaptations	There are a wide range of adaptations that can be made in Computing to allow equitable access for all pupils. These may include such things as: personalising the curriculum for an individual child so that it reflects their current level of understanding and attainment, preteaching – including key vocabulary, chunking tasks into more manageable segments based on the needs of the child, visual prompts to guide the task, knowledge organisers to activate prior learning, adapting equipment (e.g. larger keys, larger print, screen contrast, easy handle cameras), use of accessibility features on software, peer and adult support. These adaptations are planned by teachers in their Medium Term Planning and will be monitored during book looks, learning walks and pupil voice.		
Cross curricular Links	**Online Safety:** Managing Online Information Online Reputation	**English:** Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own. **Online Safety:** Online relationships Managing information online Copyright and ownership	**Art & Design**
Enhancements			
Prior Learning links	**Year 5** How can systems help us search?	**Year 5** How can we use vector graphics?	**Year 5** Can you use selection in a program?

	Spring 2	Summer 1	Summer 2
Year 6	**Why use a spreadsheet to solve a problem?** **On completion of the unit, pupils will know…** • what a data set is • how to build a data set • what a formula is • how to use formulas to produce calculated data • which data types can be used in calculations • how to apply formulas to data • that changing inputs changes outputs • how to create a spreadsheet to plan an event • different ways that data can be presented.	**Can we create in 3D?** **On completion of the unit, pupils will know…** • that you can work in three dimensions on a computer • that digital 3D objects can be modified • that objects can be combined in a 3D model • how to create a 3D model for a given purpose • how to plan their own 3D model • how to create their own 3D model	**Can you rise to the challenge?** **On completion of the unit, pupils will know…** • how to create a program to run on a controllable device • that selection can control the flow of a program • how to update a variable with a user input • how to use a conditional statement to compare a variable to a value • how to design and develop a project that uses inputs and outputs on a controllable device
Key Skills	- collect data - enter data into a spreadsheet - suggest how to structure my data - apply an appropriate format to a cell - choose an appropriate format for a cell - explain what an item of data is - construct a formula in a spreadsheet - apply a formula to multiple cells by duplicating it - calculate data using different operations - create a formula which includes a range of cells - apply a formula to calculate the data I need to answer questions - explain why data should be organised - use a spreadsheet to answer questions - produce a chart - suggest when to use a table or chart - use a chart to show the answer to questions	- add 3D shapes to a project - move 3D shapes relative to one another - view 3D shapes from different perspectives - lift/lower 3D objects - recolour a 3D object - resize an object in three dimensions - duplicate 3D objects - group 3D objects - rotate objects in three dimensions - accurately size 3D objects - combine a number of 3D objects - show that placeholders can create holes in 3D objects - analyse a 3D model - choose objects to use in a 3D model - combine objects in a design - construct a 3D model based on a design - explain how my 3D model could be improved - modify my 3D model to improve it	- apply knowledge of programming to a new environment - test program on an emulator - transfer program to a controllable device - determine the flow of a program using selection - identify examples of conditions in the real world - use a variable in an if, then, else statement to select the flow of a program - experiment with different physical inputs - explain that checking a variable doesn't change its value - use a condition to change a variable - explain the importance of the order of conditions in else, if statements - modify a program to achieve a different outcome - use an operand (e.g. <>=) in an if, then statement - decide what variables to include in a project - design the algorithm for a project - design the program flow for a project - create and test a program based on my design - use a range of approaches to find and fix bugs
Lesson Sequence	**L1:** To know how create a data set in a spreadsheet **L2:** To know how to build a data set in a spreadsheet **L3:** To know that formulas can be used to produce calculated data **L4:** To know how to apply formulas to data **L5:** To know how to create a spreadsheet to plan an event **L6:** To know suitable ways to present data	**L1:** To know that you can work in three dimensions on a computer **L2:** To know that digital 3D objects can be modified **L3:** To know that objects can be combined in a 3D model **L4:** To know how to create a 3D model for a given purpose **L5:** To know how to plan a 3D model **L6:** To know to modify and improve a 3D model	**L1:** To know that the micro:bit is an input, process, output device that can be programmed **L2:** To know that selection can control the flow of a program **L3:** To know how to update a variable with a user input **L4:** To know how to use an conditional statement to compare a variable to a value **L5:** To know what variables to include in a project **L6:** To know how to develop a program to use inputs and outputs on a controllable device

Vocabulary	data spreadsheet structure format cell formula operations calculate organised chart	dimension 3D modified model purpose plan create perspectives recolour resize duplicate rotate size placeholder analyse construct	program controllable device conditional variable flow user input value emulator bugs
Knowledge Capture Task	**Spreadsheet Quiz**	**Make your own 3D model**	**Making a step counter**
NC Computing End Points	● 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 ● 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
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Cross curricular Links	**Maths:** *Number – addition, subtraction, multiplication, and division* ● Solve problems involving addition, subtraction, multiplication, and division *Statistics* ● Interpret and construct pie charts and line graphs, and use these to solve problems ● Calculate and interpret the mean as an average **Online Safety:** Managing information online	**Art and design** ● To improve their mastery of art and design techniques, including drawing, painting, and sculpture with a range of materials **Design and technology** ● Generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Mathematics** ● Recognise, describe, and build simple 3D shapes, including making nets **Online Safety:** Privacy & Security	**Science** Keeping ourselves healthy.
Enhancements			
Prior Learning links	**Year 5** What are flat-file databases?	**Year 6** How do websites work?	**Year 6** What are variables and how can we use them?