CHERRY TREE ACADEMY

COMPUTING

Subject Statement
Computing

Rationale	At Cherry Tree Academy, we believe that computing is a subject that helps prepare our children to thrive and excel in an ever-changing society where technology plays a pivotal role. Our broad and balanced curriculum allows pupils to develop computing skills across the wider curriculum and supports them in becoming digitally literate. We aim to provide a knowledge- and skills-rich curriculum which enables our children to use technology safely, purposefully, creatively and with confidence.
Vision for the curriculum	Technology is everywhere and has a crucial influence on children's lives. At Cherry Tree Academy, computing lessons help children develop the skills and understanding to use technology safely, responsibly, and positively. Our curriculum covers the three strands of computing—digital literacy, information technology and computer science—to prepare children for the next phase of their education and equip them for success in later life.
Intent	With technology playing such a significant role in society today, it is vital to equip children with the knowledge, skills and resilience needed to participate safely and effectively in a digital world. Through our computing curriculum, we promote our school values of resilience, inclusivity, consideration, healthiness, and honesty. Pupils are encouraged to apply their computing skills across subjects, linking strongly with mathematics, science, and design technology, while developing critical thinking, creativity, problem solving and interpersonal skills. Online safety and digital resilience are central to our intent, as we aim to empower children to manage risks, make informed choices and contribute positively in the online world.
Implementation	Our computing curriculum is implemented through discrete weekly computing lessons, supported by the Teach Computing Curriculum (NCCE), and reinforced through meaningful cross-curricular opportunities in other subjects. Lessons are coherently planned and sequenced to ensure a clear progression of knowledge and skills across the Key Stages. The curriculum is designed to recognise pupils' prior learning, provide first-hand experiences, and allow children to develop interpersonal skills, resilience, and the ability to think critically and creatively. It provides both support and challenge for pupils and is ambitious in its expectations of all learners. The curriculum is structured into units that are carefully mapped across the year groups. For Key Stages 1 and 2, units follow a spiral curriculum in which key themes are revisited at least once each year. Each revisit builds upon prior learning, ensuring that knowledge is consolidated and deepened. This spiral approach reduces the likelihood of learning being forgotten, strengthens connections across different areas of computing, and provides continuity even when different teachers deliver units across consecutive years. In addition, pupils are given opportunities to apply computing skills across the curriculum, for example through digital literacy in English, data handling in science, or programming in design technology. A fundamental element of our implementation is the teaching of online safety and digital resilience. This is not confined to computing lessons alone but is embedded across the curriculum, in assemblies, and within daily school life. At Cherry Tree Academy we use Project Evolve, Jigsaw and Teach Computing (all underpinned by the Education for a Connected World framework) to provide structured and age-appropriate coverage of online safety themes. Children are taught how to recognise and avoid online harm, how to protect their personal data and privacy, how to behave

	responsibly and respectfully online, and how to think critically about the reliability of information they encounter. The statutory frameworks of Keeping Children Safe in Education and Relationships, Sex and Health Education guide this provision, and children are taught explicitly about the four categories of online risk: content, contact, conduct and commerce. Through this ambitious and carefully planned approach, our implementation ensures that pupils develop not only the technical skills required for computing but also the resilience, confidence and independence they need to thrive as safe, capable digital citizens.
Impact	Children at Cherry Tree Academy enjoy using technology to enhance and support their learning. They become confident in using a wide range of hardware and software, applying their skills creatively and effectively across the curriculum. Importantly, pupils understand how to stay safe online and know where to seek help when needed. By the end of their time with us, children demonstrate digital resilience, responsible use of technology and the ability to use computing as a tool for learning and problem solving.
Pedagogical Approach	Each computing unit is delivered through the National Centre for Computing Education's pedagogical approach which consists of 12 key principles underpinned by research: each principle has been shown to contribute to effective teaching and learning in computing. Lead with concepts - Support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary. Work together - Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding. Get hands-on - Use physical computing and making activities that offer tactile and sensory experiences to enhance learning. physical computing supports and engages a diverse range of pupils in tangible and challenging tasks. Unplug, unpack, repack - Teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. Model everything - Model processes or practices — everything from debugging code to binary number conversions — using techniques such as worked examples and live coding. Foster program comprehension – Use a variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson's Problems. This helps to secure understanding and build connections with new knowledge. Create projects - Use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Add variety - Provide activities with different levels of direction, scaffolding, and support that promote learning, ranging from highly structured to more exploratory tasks. Challenge misconceptions - Use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Make concrete - Bring abstract concepts to life with real-world, contextual examples and a focus on interdependence with other curriculum subjects. Structure lessons - Use supportive frameworks when planning lessons, such as PRIMM (Predict, Run, Investigate, Modify, Make) and (Use-Modify-Create). These frameworks are based on research and ensure that differentiation can be built in at various stages of the lesson.

	Read and explore code first - When teaching programming, focus first on code 'reading' activities before code writing. With both block-based and text-based programming, encourage pupils to review and interpret blocks of code.
Adaptation for SEND learners	At Cherry Tree Academy, we use a number of strategies to support children with SEND. Strategies include: Scaffolding • Support for SEND children with learning vocabulary and key concepts. • All scaffolding follows a 'I do, we do, you do' or 'my turn, your turn' approach. • Use of supported recording frames to give added structure and prompting or to break down steps into smaller chunks. Explicit Instruction • Clear modelling from adults in class – modelling thinking and outcome expectations. • Visual aids (including communicate in print) and concrete examples (where necessary) will be used to support learning. Cognitive and Metacognitive Strategies • Tasks are 'chunked' into smaller steps. • Vocabulary prompts (including visual prompts). • Depending on ability, children with SEND may be asked to evaluate their own progress and discuss what they can do to move their learning forward. Flexible Grouping • Pre-teaching. • Children will be grouped flexibly depending on the task. Temporary groups may be established to support learning a particular concept. • Buddy systems may be put in place to support with certain tasks. • Teaching assistants may be used strategically to support learners. Use of technology / adapted technology • Technology for children with VI will be used to improve vision. • Access to individual and personalised technology to support an identified need (e.g. VI, HI or PD) • Text may be enlarged or copied onto different coloured backgrounds when needed. • Technology to mirror adult screen to improve accessibility. • Recording devices. • Modified keyboard / mouse. *Enabling environments* • Flexible seating including provision of workstations for children that require a more personal space to work in. • Nurturing / supportive environments.
Strengths	Cherry Tree Academy benefits from a clear and progressive curriculum, firmly rooted in the Teach Computing Curriculum. This ensures that knowledge and skills build logically from year to year. Our strong focus on online safety is a particular strength, with provision supported by Project Evolve, Teach Computing, PolEd and Jigsaw. The school is well resourced, with two class sets of iPads enabling pupils to develop digital fluency. In addition, we draw upon a wide range of high-quality resources and initiatives such as Think U Know, ChildNet, BBC Own It, Safer Internet Day and Barefoot Computing to enrich and strengthen provision. These elements combine to create a curriculum that is forward-looking, inclusive and equipping all pupils with the skills they need to thrive in a digital world.

MEDIUM TERM PLAN

Cycle A

Cherry Tree Academy Medium Term - Computing

Autumn 1		
KS1	Computer Systems and Networks	
	Year 1	**Year 2**
	L1: What is IT? L2: What IT do we have in school? L3: What types of IT do we have in the world? L4: What are the benefits of IT? L5: Why is it important to use IT safely and how can we keep ourselves safe when using IT? L6: How can we use IT in different ways?	L1: What is IT? L2: What IT do we have in school? L3: What types of IT do we have in the world? L4: What are the benefits of IT? L5: Why is it important to use IT safely and how can we keep ourselves safe when using IT? L6: How can we use IT in different ways?
Key Concepts to assess	L1: Children can identify examples of computers and identify that a computer is a part of IT. L2: Children can identify examples of IT in school and sort school IT by what it is used for. L3: Children can find examples of IT and sort where it is found. L4: Children can recognise common types of technology. They can say why we use IT. L5: Children can talk about the rules for using IT. They know how rules can help keep them safe. L6: Children can use IT for different types of activities and can explain the need to use IT in different ways.	L1: Children can identify examples of computers, describe some uses of computers and identify that a computer is a part of IT. L2: Children can identify examples of IT in school and sort school IT by what it is used for. They can identify that some IT can be used in more than one way. L3: Children can find examples of IT and sort where it is found. They can talk about uses of IT. L4: Children can recognise common types of technology. They can demonstrate how IT devices work together and say why we use IT. L5: Children can list different uses of IT and can talk about the rules for using IT. They know how rules can help keep them safe. L6: Children can identify the choices that they make when using IT. They can use IT for different types of activities and can explain the need to use IT in different ways.
Vocabulary	Information technology (IT), computer, laptop	Information technology (IT), computer, laptop, barcode, scanner/scan
Experiences		
SMSC		
British Values	Rule of Law – laws and rules around IT use	
School Values	Honest – Importance of following rules around IT use.	

Cherry Tree Academy Medium Term - Computing

Autumn 2		
KS1	Digital Photography	
	Year 1	**Year 2**
	L1: How do you take a photograph? L2: Can you take a photograph that is landscape and portrait? L3: What makes a good photograph? L4: Why is lighting important when taking a photograph? L5: How can different effects be used to change an image? L6: Are all photographs real?	L1: How do you take a photograph? L2: Can you take a photograph that is landscape and portrait? L3: What makes a good photograph? L4: Why is lighting important when taking a photograph? L5: How can different effects be used to change an image? L6: Are all photographs real?
Key Concepts to assess	L1: Children can recognise what devices can be used to take photographs and they can talk about how to take a photograph. L2: Children can explain the process of taking a good photograph and can take photographs in both landscape and portrait format. L3: Children can discuss how to take a good photograph and can improve a photograph by retaking it. L4: Children can explore the effect that light has on a photo. Children can explain why a picture may be unclear. L5: Children can recognise that images can be changed and can use a tool to achieve a desired effect. L6: Children can capture a photo. Children can recognise which photos have been changed and can which ones are real.	L1: Children can recognise what devices can be used to take photographs and they can talk about how to take a photograph. Children can explain what they did to capture a digital photo. L2: Children can explain the process of taking a good photograph and can take photographs in both landscape and portrait format. Children can explain why a photo looks better in portrait or landscape format. L3: Children can identify what is wrong with a photograph. Children can discuss how to take a good photograph and can improve a photograph by retaking it. L4: Children can explore the effect that light has on a photo and can experiment with different light sources. Children can explain why a picture may be unclear. L5: Children can recognise that images can be changed and can use a tool to achieve a desired effect. Children can explain their choices. L6: Children can apply a range of photography skills to capture a photo. Children can recognise which photos have been changed and can which ones are real.
Vocabulary	camera, photograph, capture, image, digital, landscape, portrait, Framing, subject, flash, focus, background, Editing, filter	Device, camera, photograph, capture, image, digital, landscape, portrait, Framing, subject, compose, Light sources, flash, focus, background, Editing, filter, Format
Experiences		
SMSC	Moral – changing photographs (should we do this?)	
British Values	Mutual respect – when taking photographs of other people.	
School Values	Considerate – when taking photographs of other people.	

Cherry Tree Academy Medium Term - Computing

Spring 1		
KS1	Creating Media – Making Music	
	Year 1	**Year 2**
	L1: How does different music make you feel? L2: What are rhythms and patterns in music? L3: How can music be used? L4: What are musical notes and what is tempo? L5: How can we create digital music? L6: How can we review and edit music?	L1: How does different music make you feel? L2: What are rhythms and patterns in music? L3: How can music be used? L4: What are musical notes and what is tempo? L5: How can we create digital music? L6: How can we review and edit music?
Key Concepts to assess	L1: Children can describe music using adjectives. Children can say what they like and dislike about a piece of music. L2: Children can create a rhythm pattern and can play an instrument following a rhythm pattern. L3: Children can connect images with sounds. Children can use a computer to experiment with pitch. L4: Children can identify that music is a sequence of notes. Children can use a computer to refine a musical pattern. L5: Children can create a simple rhythm on the computer which represents an animal they have chosen and can add a sequence of notes to the rhythm. L6: Children can review their work. Children can listen to music and describe how it makes them feel.	L1: Children can identify simple different in pieces of music and can describe music using adjectives. Children can say what they like and dislike about a piece of music. L2: Children can create a rhythm pattern and can play an instrument following a rhythm pattern. Children can explain that music is created and played by humans. L3: Children can connect images with sounds. Children can use a computer to experiment with pitch and can relate an idea to a piece of music. L4: Children can identify that music is a sequence of notes. Children can explain how music can be played in different ways and can use a computer to refine a musical pattern. L5: Children can create a rhythm on the computer which represents an animal they have chosen and can add a sequence of notes to the rhythm. L6: Children can review their work and explain how they have changed it. Children can listen to music and describe how it makes them feel.
Vocabulary	Music, quiet, loud, feelings, rhythm, pulse, pitch, tempo, notes, instrument, Create, Open, select, tool	Music, quiet, loud, feelings, emotions, Pattern, rhythm, pulse, pitch, tempo, notes, instrument, Create, Open, edit, select, tool
Experiences		
SMSC	Spiritual – music and the affect it has on different people	
British Values		
School Values	Honest – when evaluating work Resilient – things go wrong in computing and we have to find ways to fix the problems without getting upset.	

Cherry Tree Academy Medium Term - Computing

Spring 2		
KS1	Programming - BeeBots	
	Year 1	**Year 2**
	L1: Can you follow and give instructions? L2: How does the order of a set of instructions affect the outcome? L3: Can you predict the outcome of a program? L4: How can we make a mat for the floor robot? L5: Can you design an algorithm? L6: Can you create and debug a program?	L1: Can you follow and give instructions? L2: How does the order of a set of instructions affect the outcome? L3: Can you predict the outcome of a program? L4: How can we make a mat for the floor robot? L5: Can you design an algorithm? L6: Can you create and debug a program?
Key Concepts to assess	L1: Children can follow instructions and with some support give instructions. L2: Children can use an algorithm to program a sequence of a floor robot and can show the difference in outcomes between two sequences that consist of the same instructions. L3: Children can follow a sequence and can predict the outcome of a sequence. L4: Children can identify different routes around their mat and can test their mat to make sure it is usable. L5: Children can create an algorithm to meet their goal and can use their algorithm to create a program. L6: Children can test and debug each part of the program. Children can plan algorithms for different parts of a task.	L1: Children can follow instructions given by someone else and can give clear instructions. L2: Children can use the same instructions to create different algorithms. Children can use an algorithm to program a sequence of a floor robot and can show the difference in outcomes between two sequences that consist of the same instructions. L3: Children can follow a sequence and can predict the outcome of a sequence. Children can compare their prediction to the program outcome. L4: Children can explain the choices they have made for their mat designs. Children can identify different routes around their mat and can test their mat to make sure it is usable. L5: Children can explain what their algorithm should achieve. Children can create an algorithm to meet their goal and can use their algorithm to create a program. L6: Children can test and debug each part of the program. Children can plan algorithms for different parts of a task and can put together the different parts of the program.
Vocabulary	Instruction, sequence, clear, algorithm, program order, prediction, design, route, mat, Debugging	Instruction, sequence, clear, unambiguous, algorithm, program order, prediction, Artwork, design, route, mat, Debugging, decomposition
Experiences		
SMSC		
British Values		
School Values	Honest – when making predictions and comparing to outcomes.	

Cherry Tree Academy Medium Term - Computing

Summer 1		
KS1	Data and Information - Pictograms	
	Year 1	**Year 2**
	L1: How can we count and compare using a tally chart? L2: How can data be entered onto a pictogram using a computer? L3: How can we use the computer to create a pictogram? L4: What is an attribute? L5: How can people be describe using attributes? L6: How can we present information in different ways?	L1: How can we count and compare using a tally chart? L2: How can data be entered onto a pictogram using a computer? L3: How can we use the computer to create a pictogram? L4: What is an attribute? L5: How can people be describe using attributes? L6: How can we present information in different ways?
Key Concepts to assess	L1: Children can record data in a tally chart and can represent a tally count as a total. With support children can compare totals in a tally chart. L2: Children can enter data onto a computer. Children can use pictograms to answer simple questions about objects. L3: Children can organize data in a tally chart. Children can use a tally chart to create a pictogram. L4: Children can tally objects using a common attribute. Children can create a pictogram to arrange objects by an attribute. L5: With support children can choose a suitable attribute to compare people. Children can collect the date they need and use it to create a pictogram. L6: Children can use a computer program to present information in different ways. -	L1: Children can record data in a tally chart and can represent a tally count as a total. Children can compare totals in a tally chart. L2: Children can enter data onto a computer and can use a computer to view data in a different format. Children can use pictograms to answer simple questions about objects. L3: Children can organise data in a tally chart. Children can use a tally chart to create a pictogram and explain what the pictogram shows. L4: Children can tally objects using a common attribute. Children can create a pictogram to arrange objects by an attribute and can answer comparison questions about an attribute. L5: Children can choose a suitable attribute to compare people. Children can collect the date they need and use it to create a pictogram which they can draw conclusions from. L6: Children can use a computer program to present information in different ways. Children can share what they have found out using a computer and give examples of why information should not be shared.
Vocabulary	More than, less than, most, least, organise, data, object, tally chart, total , Pictogram, enter, data, Attribute, group, same, different, conclusion, block diagram, common, sharing, data	More than, less than, most, least, organise, data, object, tally chart, votes, total , Pictogram, enter, data, compare, Attribute, group, same, different, most popular, least popular, conclusion, block diagram, common, sharing, data
Experiences		
SMSC		
British Values	Rule of Law – laws around information sharing Democracy – when voting as part of tally chart work	
School Values	Honest	

Cherry Tree Academy Medium Term - Computing

Summer 2		
KS1	Programming – Scratch Jnr	
	Year 1	**Year 2**
	L1: How can we start and run a sequence in Scratch Jnr? L2: What is an outcome? L3: What is design and how can we use design in our program? L4: How can we change a design? L5: How can we design and create a program? L6: How can we make our design better?	L1: How can we start and run a sequence in Scratch Jnr? L2: What is an outcome? L3: What is design and how can we use design in our program? L4: How can we change a design? L5: How can we design and create a program? L6: How can we make our design better?
Key Concepts to assess	L1: Children can identify the start of a sequence. Children can show how to run their program. L2: Children can predict the outcome of a sequence of commands. Children can match two sequences with the same outcome. L3: Children can decide which blocks to use to meet the design and can build the sequences of blocked needed. L4: Children can choose backgrounds and characters for the design. L5: Children can choose the images for their own design. Children can create an algorithm. With support children can build sequences of blocks to match their design. L6: With support children can compare their project to their design. Children can improve their project by adding new features.	L1: Children can identify the start of a sequence and identify that a program needs to be started. Children can show how to run their program. L2: Children can predict the outcome of a sequence of commands. Children can match two sequences with the same outcome. Children can change the outcome of a sequence of commands. L3: Children can work out the actions of a sprite in an algorithm. Children can decide which blocks to use to meet the design and can build the sequences of blocked needed. L4: Children can choose backgrounds and characters for the design. Children can create a program based on the new design. L5: Children can choose the images for their own design. Children can create an algorithm. Children can build sequences of blocks to match their design. L6: Children can compare their project to their design. Children can improve their project by adding new features. Children can debug their program.
Vocabulary	Sequence, command, program, run, start, predict, program, blocks, Sprite, algorithm, design, sequence, change, build, match, Compare, features	Sequence, command, program, run, start, outcome, predict, program, blocks, Sprite, algorithm, design, sequence, Actions, project, modify, change, build, match, Compare, debug, features, evaluate
Experiences		
SMSC		
British Values		
School Values		

Cherry Tree Academy Medium Term - Computing

LKS2	Autumn 1	
	Computer systems and networks	
	Year 3	**Year 4**
	L1: How does a digital device work? L2: What parts make up a digital device? L3: How do digital devices help us? L4: How am I connected? L5: How are computers connected? L6: What does our school network look like?	
Key Concepts to assess	L1: Children know how to follow a process and that digital devices accept inputs and produce outputs. L2: Children will develop their knowledge of the relationship between inputs, processes, and outputs. L3: Children will apply their learning from Lessons 1 and 2 by using programs in conjunction with inputs and outputs on a digital device. They will create two pieces of work with the same focus, using digital devices to create one piece of work, and non-digital tools to create the other. L4: Children will explain how computers are joined together to form networks. L5: Children will examine each device's functionality and look at the benefits of networking computers. L6: Children will understand and discuss network infrastructure in a real-world setting.	L1: Children can explain how digital devices accept inputs and produce outputs. L2: Children will apply their knowledge to devices and parts of devices that they will be familiar with from their everyday surroundings. L3: Children will compare and contrast the two approaches. L4: Children will explain how and why computers are joined together to form networks. L5: Children can recognise that a computer network is made of a number of devices, and demonstrate how information can be passed between devices. L6: Children will relate network infrastructure in a real-world setting to the activities in previous lessons.
Vocabulary	Input, output, digital devices, process, wifi, tablets, mobile phones, connections	Networks, server, wireless access point, infrastructure
Experiences		
SMSC		
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

LKS2	Autumn 2	
	Programming a sequence in music	
	Year 3	**Year 4**
	L1: What is Scratch? L2: How can I use programming Sprites? L3: How can I experiment with sequences? L4: Can I create my own sequence? L5: How can I change the appearance? L6: Can I make an instrument?	
Key Concepts to assess	L1: Children will familiarise themselves with the basic layout of the screen and use basic features of the program. L2: Children will create a program following a design for more than one sprite. L3: Children will start a program in different ways and create a sequence of connected commands. L4: Children will experiment with sequences and explore creating their own sequences. L5: Children will change the appearance of a sprite and backdrops to change the appearance of the stage. L6: Children will identify and name the objects needed for a project, and implement their algorithm as a code.	L1: Children will be able to compare Scratch to other programming environments. L2: Children will create code to replicate a given outcome and experiment with new motion blocks. L3: Children will be able to explain how the objects in their project will respond exactly to the code. L4: Children will explain what a sequence is, order notes into a sequence and combine sound commands. L5: Children will apply the skills in Activity 1 and 2 to design and create their own project, including sequences, sprites with costumes, and multiple backdrops. L6: Children will evaluate their code, identifying which parts can be improved in future projects.
Vocabulary	Scratch, sprites, backdrops, blocks, commands, actions, costumes.	Attributes, motion blocks
Experiences		
SMSC	Preparation for adulthood, exploring career options.	
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

LKS2	Spring 1	
	Photo editing	
	Year 3	**Year 4**
	L1: How can I change digital images L2: How can I recolour images? L3: Can I improve an edit by cloning? L4: How can I experiment with tools? L5: Can I describe and create my own image? L6: How can I use feedback to guide making changes?	
Key Concepts to assess	L1: Children will explore and discuss image composition, rotating and cropping an image to edit it. L2: Children will experiment with different colour effects and explain why they chose the effects. L3: Children can add to the composition of an image by cloning and identify how a photo edit can be improved. L4: Children can experiment with tools to select and copy part of an image, they can use a range of tools to copy between images, and can explain why photos might be edited. L5: Children will describe the image they want to create and choose suitable images for their project. L6: Children can combine text and their image to complete the project. They can use feedback to guide making changes.	L1: Children will confidently use photo editing software and can explain why they might edit an image. L2: Children will be able to explain how different colour effects make you think and feel different things. L3: Children can remove parts of an image using cloning and can explain why they have chosen to use specific edits. L4: Children can explain why they have chosen to use the tools they have and discuss with peers the benefits and challenges of photo editing. L5: Children will create a project that is a combination of other images. L6: Children can independently review images against a given criteria.
Vocabulary	Digital image, rotate, crop, colour effects, select, copy, tools	Composition, cloning, combine, criteria
Experiences		
SMSC	Preparation for adulthood, exploring career options, online safety	
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

LKS2	Spring 2	
	Audio production	
	Year 3	**Year 4**
	L1: How do I record sound? L2: How do I edit audio L3: How can I plan a podcast? L4: How can I create a podcast? L5: Does combining audio improve the sound? L6: What are the strengths and weaknesses of my podcast?	
Key Concepts to assess	L1: Children will identify the input and output devices used to play and record sound and use a computer to record audio. L2: Children will record and re-record their voices to improve their recordings. They will identify the features of a podcast. L3: Children will import and align sound effects to create layers in their recordings. They will plan appropriate content for a podcast. L4: Children will review their voice tracks for their podcasts. They will review their recordings and re-record where necessary. L5: Children will arrange multiple sounds to create the effect they want. L6: Children will listen to a recording to identify its strengths. They will choose appropriate edits to improve their podcast.	L1: Children will discuss the copyright issues around recording sound and will know that the person who records the sound can say who is allowed to use it. L2: Children will inspect the soundwave view to know where to trim their recording and will explain why they have done so. They will identify which sounds can be added to a podcast. L3: Children will be able to save their project so it remains editable. They will explain how sounds can be combined to make a podcast more engaging. L4: Children will edit, trim and align their voice recordings. They will explain why they have chosen to re-record where necessary. L5: Children will be able to explain the difference between saving a project and exporting an audio file. L6: Children will identify strengths and areas of weakness within their podcast and edit accordingly. They will explain why they have made the edits they have.
Vocabulary	Microphone, speaker, headphone, podcast, audio, soundwave, sound effects, layers, background music.	Audacity, ownership, copyright, trim, align.
Experiences		
SMSC	Preparation for adulthood, exploring career options.	
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

LKS2	Summer 1	
	Branching databases	
	Year 3	**Year 4**
	L1: Can I create questions with yes/no answers? L2: How can I make groups? L3: Can I create a branching database? L4: How can I structure a branching database? L5: Can I plan a branching database? L6: How should I make a dinosaur identifier?	
Key Concepts to assess	L1: Children will investigate and create questions with a yes/no answer. L2: Children will arrange objects into a tree structure and select an attribute to separate objects into groups. L3: Children will select objects to arrange in a branching database, group objects using their own yes/no questions and will test their branching database to see if it works. L4: Children will create yes/no questions using given attributes and compare two branching database structures. L5: Children will independently plan a branching database by creating a physical representation. They will arrange the questions and objects into a tree structure. L6: Children will create a branching database that reflects their plan and work with a partner to test their identification tool.	L1: Children will create two groups of objects, separated by one attribute. L2: Children will create a group of objects within an existing group. L3: Children will evaluate their branching database to see if it works and make appropriate changes where relevant. L4: Children will explain that questions needed to be ordered carefully to split objects into similarly sized groups. L5: Children will separate a group of objects effectively by thinking of the attributes of objects. They will evaluate their planned tree structure and make any improvements before testing the structure. L6: Children will create a branching database that reflect their plan and can give accurate feedback to a partner whilst testing. They will suggest real-world uses for branching databases.
Vocabulary	Questions, investigate, groups, branching database, compare	Attributes, tree structure
Experiences		
SMSC	Preparation for adulthood, exploring career options.	
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

LKS2	Summer 2	
	Programming B: repetition in games	
	Year 3	**Year 4**
	L1: How can I use loops to create shapes? L2: How I use different loops? L3: Can I animate my name? L4: Can I modify a game? L5: Can I design a game? L6: Can I create a game?	
Key Concepts to assess	L1: Children will list an everyday task as a set of instructions including repetition and can predict the outcome of a snippet code. L2: Children will modify loops to produce a given outcome and choose when to use a count-controlled and infinite loop. L3: Children will choose which action will be repeated for each object and explain what the outcome of the repeated action should be. L4: Children will identify which parts of a loop can be changed and explain the effect of their changes. L5: Children will develop their own design selecting key parts of an existing project to use and explaining what their project will do. L6: Children will build a program that follows their design. With a partner they will be able to evaluate the steps they followed whilst building the project.	L1: Children will modify a snippet code to create a given outcome. L2: Children will recognise that some programming languages enable more than one process to be run at once. L3: Children will evaluate the effectiveness of the repeated sequences used in their program. L4: Children will be skilled enough to know when to re-use existing code snippets on new sprites. L5: Children will evaluate their use of repetition in a project and can explain why they have selected the key parts for use in their own project. L6: Children will refine the algorithm in their design. They will independently evaluate the steps they followed whilst building their project.
Vocabulary	Repetition, loops, instructions, snippet code, repeated action, algorithm, program	Programming languages, count-controlled loops, infinite, re-use
Experiences		
SMSC	Preparation for adulthood, exploring career options.	
British Values	Mutual respect, rule of law	
School Values	Honest, resilient, healthy	

Cherry Tree Academy Medium Term - Computing

Autumn 1		
UKS2	Computer Systems and Networks	
	Year 5	Year 6
	L1: How can computers be connected together? L2: What is the role of computers in our lives? L3: What is a search engine and how do we use it? L4: How do search engines select what to show us? L5: What is the ranking of results? L6: Why is the ranking of results important, and how does it affect different people?	L1: How can computers be connected, and what are the benefits and challenges of different connection methods? L2: What is the role of computers in our lives, and how has this role evolved over time? L3: What is a search engine, how do we use it effectively, and what are some advanced search techniques? L4: How do search engines select what to show us, and what algorithms influence these selections? L5: What is the ranking of results, and what factors contribute to the ranking? L6: Why is the ranking of results important, how does it affect different people, and what are the implications of biased or manipulated rankings?
Key Concepts to assess	L1: Children will know that systems are built using a number of parts that communicate with each other. L2: Children will know the tasks managed by computer systems and how to keep personal information safe online. L3: Children will know how to use web searches to find specific information. L4: Children will know how to recognise the role of web crawlers in creating an index. L5: Children will explain that a search engine follows rules to rank results. L6: Children will describe some of the ways that search results can be influenced	L1: Children will understand how systems are built using multiple parts that communicate with each other, including the benefits and challenges of different connection methods. L2: Children will understand the tasks managed by computer systems, how to keep personal information safe online, and the evolving role of computers in our lives. L3: Children will demonstrate how to use web searches to find specific information and employ advanced search techniques. L4: Children will explain the role of web crawlers in creating an index and how algorithms influence search results. L5: Children will understand that a search engine follows rules to rank results and identify the factors that contribute to this ranking. L6: Children will describe ways search results can be influenced and understand the implications of biased or manipulated rankings on different people.
Vocabulary	Searchers, search term, links , location, Search engines, crawlers Webpage creators, terms, text, images	Searchers, search term, links , location, Search engines, crawlers Webpage creators, terms, text, images, https, reliable, source, algorithm. System, perform, components, input, output
Experiences	Plan safer internet day assembly	
SMSC	Social- have computers and access to a wealth of information had any negative consequences?	
British Values	Rule of Law- how are we protected online?	
School Values	Considerate- when posting on line be considerate of others feelings.	

Cherry Tree Academy Medium Term - Computing

Autumn 2		
UKS2	Programming: Selection in physical computing	
	Year 5	Year 6
	L1: Children will understand how to control a simple circuit connected to a computer. L2: Children will learn about count-controlled loops and their application in programming. L3: Children will explore how to control a loop based on specific conditions being met. L4: Children will investigate the concept of continuously checking whether a condition has been met using loops. L5: Children will learn about selection and how it can be practically implemented in programming. L6: Children will explore how to control a physical computing project through programming.	L1: Children will understand advanced methods to control circuits connected to computers, considering various connection methods. L2: Children will explore count-controlled loops and their practical applications in programming, including iterative processes. L3: Children will master conditional loops and understand how to manipulate loops based on specific conditions. L4: Children will investigate continuous checking of conditions in loops, understanding efficiency and practical implications. L5: Children will delve into the concept of selection and its implementation in programming, including conditional statements. L6: Children will demonstrate proficiency in programming for physical computing projects, applying learned skills to control devices effectively.
Key Concepts to assess	L1: Children will create a simple circuit and connect it to a microcontroller. L2: Children will use a count-controlled loop to regulate outputs. L3: Children will design and implement a true or false conditional loop. L4: Children will explain how a condition being met triggers an action. L5: Children will identify a real-world scenario where a condition triggers an action and describe the function of their project. L6: Children will develop an algorithm detailing the operation of their model.	L1: Children will create a simple circuit, connect it to a microcontroller, and explain what an infinite loop does. L2: Children will use a count-controlled loop to control outputs and design sequences that utilize count-controlled loops. L3: Children will design a true or false conditional loop and program a microcontroller to respond to an input. L4: Children will be able to explain that a condition being met can initiate an action and use selection (an 'if...then...' statement) to direct the flow of a program. L5: Children will identify a real-world example of a condition initiating an action, describe what their project will do, and create a detailed drawing of their project. L6: Children will write an algorithm that describes what their model will do and can test and debug their project.
Vocabulary	Repetition, shapes, loops, code, snippet, count controlled loop, patterns, predict, simple circuit microcontroller, infinite loop, LED, switch, Crumble motor, components, connect, output, input conditional loop, Crumble controller,	Repetition, shapes, loops, accuracy, logo text-based, code, snippet, count controlled loop, patterns, predict, simple circuit microcontroller, infinite loop, LED, switch, Crumble motor, components, connect, output, input conditional loop, Crumble controller, debugging, Circuit, infinite, repetition, conditions, represent
Experiences	Share programmed projects with KS1	
SMSC	Cultural- how much do computers influence our everyday lives?	
British Values	Democracy- could we create a program for voting or would this lead to inaccurate outcomes	
School Values	Healthy- how can we maintain our health by limiting access to computers?	

Cherry Tree Academy Medium Term - Computing

Spring 1		
UKS2	Creating Media	
	Year 5	Year 6
	L1: How can we use different drawing tools to achieve various outcomes? L2: What's a vector drawing and how do I create one? L3: How can I achieve my desired artistic effects? L4: Can drawings include layers for added complexity? L5: How does grouping elements make the design process more manageable? L6: What are the differences between vector and traditional (raster) drawing techniques?	L1: How can we use advanced drawing tools to achieve specific artistic outcomes? L2: What's a vector drawing, and how does it differ from raster-based drawing methods? L3: How can I manipulate vectors to achieve intricate artistic effects? L4: Can complex drawings benefit from layering techniques, and how do they enhance the final product? L5: How does strategic grouping of elements streamline the design workflow in digital art? L6: What are the unique advantages and limitations of vector graphics compared to traditional drawing methods?
Key Concepts to assess	L1: Children will learn that vector drawings are created using shapes and will experiment with the shape and line tools. L2: Children will explain that each element added to a vector drawing is an object. L3: Children will use the zoom tool to help them add detail to drawings and explain how alignment grids and resize handles can improve consistency. L4: Children will identify that each added object creates a new layer in the drawing. L5: Children will recognise when they need to group and ungroup objects. L6: Children will create a vector drawing for a specific purpose.	L1: Children will know that vector drawings are made using shapes, will experiment with the shape and line tools, and explain how these differ from traditional drawings. L2: Children will explain that each element added to a vector drawing is an object and will be able to move, resize, and rotate objects. L3: Children will use the zoom tool to help them add detail to drawings and explain how alignment grids and resize handles can be used to improve consistency. L4: Children will know how to identify that each added object creates a new layer in the drawing and change the order of layers in a vector drawing. L5: Children will recognise when they need to group and ungroup objects and will reuse a group of objects to further develop their vector drawing. L6: Children will create a vector drawing for a specific purpose and reflect on the skills used and why they used them.
Vocabulary	Examine, variety, manipulate. Dimensions, ungrouping composition digital image rotate crop colour effects cloning select and copy tools combine, vector	Examine, variety, manipulate. Dimensions, ungrouping composition digital image rotate crop colour effects cloning select and copy tools combine drawing tools vectordrawings move resize rotate duplicate zoom tool alignment grids modify layer grouping ungrouping
Experiences	Produce a vector drawing to create a poster to advertise Sports tournament for PE.	
SMSC	Cultural- will digital art replace painted art?	
British Values	Individual liberty- can we express ourselves with digital art in the same way as painted art?.	
School Values	Resilience- to persevere when faced with challenges.	

Cherry Tree Academy Medium Term - Computing

Spring 2		
UKS2	Programming: Sensing	
	Year 5	Year 6
	L1: How can we create a program to run on a controllable device? L2: What is a selection and how can it control the flow of a program? L3: How can a user update a variable with input? L4: Can a conditional statement compare a variable to a value? L5: Can we use inputs and outputs within a controllable device? L6: How can I develop my program?	L1: How can we design and implement a program to operate on a controllable device effectively? L2: What is a selection and how can it be utilized to control and optimize the flow of a program? L3: How can a user efficiently update a variable using input and ensure its accuracy within the program? L4: Can a conditional statement effectively compare a variable to a specified value and execute the appropriate action? L5: How can inputs and outputs be effectively integrated and managed within a controllable device to achieve desired outcomes? L6: How can I systematically develop, refine, and optimize my program to enhance functionality and user experience?
Key Concepts to assess	L1: Children will be able to test their program on an emulator. L2: Children will know how to use a variable in an if-then-else statement to control the flow of a program. L3: Children will use a condition to modify a variable. L4: Children will know how to use an operator (e.g., <, >, =) in an if-then statement. L5: Children will design the algorithm for their project. L6: Children will test their program against the original design.	L1: Children will be able to test their program on an emulator and transfer the program to a controllable device. L2: Children will know how to use a variable in an if-then-else statement to control the flow of a program and determine the flow of a program using selection. L3: Children will use a condition to modify a variable and experiment with different physical inputs. L4: Children will know how to use an operator (e.g., <, >, =) in an if-then statement and explain the importance of the order of conditions in else-if statements. L5: Children will design the algorithm for their project and decide which variables to include in a project. L6: Children will test their program against the original design and use a range of approaches to identify and fix bugs.
Vocabulary	Process, device, micro: bit emulator variable selection condition operand	Process, device, explore, features, flow, micro: bit input process output controllable device emulator variable selection condition operand
Experiences	Design a program to share with parents in an open evening	
SMSC	Social- present their project to a group of other children.	
British Values	Mutual respect- listen and offer constructive feedback to peers on their program.	
School Values	Resilience- work methodically to debug a program.	

Cherry Tree Academy Medium Term - Computing

Summer 1		
UKS2	3D modelling	
	Year 5	Year 6
	L1: How can we work in three dimensions on a computer? L2: Can 3D objects be manipulated on screen, and how? L3: What happens when we combine 3D objects on screen? L4: How can I use software to create a 3D model for a purpose? L5: Can I use software to plan a 3D model? L6: How can we turn our design into reality?	L1: How can we work in three dimensions on a computer, and what are the advanced tools available for this? L2: Can 3D objects be manipulated on screen, and how can we utilize advanced techniques to refine their appearance? L3: What are the implications when combining complex 3D objects on screen, and how does this impact design outcomes? L4: How can I use sophisticated software features to create intricate 3D models tailored for specific purposes, and what are the considerations for precision? L5: Can I use advanced software tools to meticulously plan and visualize complex 3D models, and what strategies ensure efficient planning? L6: How can we effectively translate our intricate designs into physical reality using advanced manufacturing techniques and materials?
Key Concepts to assess	L1: Children will understand how to view 3D shapes from different perspectives. L2: Children will be able to resize an object in three dimensions and lift/lower 3D objects. L3: Children will rotate objects in three dimensions and duplicate them when needed. L4: Children will accurately size 3D objects and demonstrate how placeholders can create holes in 3D objects. L5: Children will analyse a 3D model and select objects to incorporate into a 3D model. L6: Children will construct a 3D model based on a design and evaluate how it could be improved.	L1: Children will understand how to view 3D shapes from different perspectives and move 3D shapes relative to each other. L2: Children will be able to resize an object in three dimensions, lift/lower 3D objects, and recolour them. L3: Children will rotate objects in three dimensions, duplicate them when needed, and group them. L4: Children will accurately size 3D objects, demonstrate that placeholders can create holes in 3D objects, and combine several 3D objects. L5: Children will be able to analyse a 3D model, choose objects to use in a 3D model, and combine objects within a design. L6: Children will construct a 3D model based on a design, evaluate how it could be improved, and make these modifications.
Vocabulary	Tinkercad 3D modelling 3 dimensions perspectives resize rotate duplicate place holders construct design model	Tinkercad 3D modelling 3 dimensions perspectives resize rotate duplicate place holders construct design model resize rotate duplicate zoom tool alignment grids modify layer grouping ungrouping
Experiences	Present finished to model in parents open evening.	
SMSC	Social: work collaboratively to evaluate constructively.	
British Values	Individual liberty- respect the different choices each person makes when designing their model.	
School Values	Resilience- overcome challenges and aspects of the model that do not go to plan..	

Cherry Tree Academy Medium Term - Computing

Summer 2		
UKS2	Introduction to Spreadsheets	
	Year 5	Year 6
	L1: What is a data set and how can we make one? L2: What is formatting and why do we use it? L3: What are formulas and how can they help us? L4: Can we alter a formula's output? L5: Can we use a spreadsheet to help plan an event? L6: How can we present our data to answer a question?	L1: What is a data set, and how can we create and manage one effectively? L2: What is formatting in spreadsheets, and why is it essential for presenting data effectively? L3: How do formulas work in spreadsheets, and how can they be used to perform complex calculations? L4: Can we modify a formula to produce different outcomes based on varying conditions? L5: How can we utilise a spreadsheet to meticulously organise and coordinate tasks for planning an event? L6: What strategies can we use to present data from a spreadsheet to effectively address specific questions or problems?
Key Concepts to assess	L1: Children will be able to collect data and enter it into a spreadsheet. L2: Children will be able to explain what a data item is and choose an appropriate format for cells. L3: Children will explain which data types can be used in calculations and construct formulas within a spreadsheet. L4: Children will know how to calculate data using different operations across a range of cells. L5: Children will be able to use a spreadsheet to answer questions and explain the importance of organizing data. L6: Children will know how to create a chart to illustrate their findings.	L1: Children will be able to collect data, enter it into a spreadsheet, and suggest ways to structure it. L2: Children will be able to explain what a data item is, choose an appropriate format for a cell, and apply it correctly. L3: Children will explain which data types can be used in calculations, construct formulas within a spreadsheet, and identify how changing inputs affects outputs. L4: Children will know how to calculate data using different operations across a range of cells, including duplication over multiple cells. L5: Children will be able to use a spreadsheet to answer questions, explaining why data should be organised and how it can be used to answer questions. L6: Children will know how to produce a chart to answer a question and explain when a table may be more appropriate.
Vocabulary	order sort fields record flat file database grouping sorting values criteria chart formulas cells	order sort fields record flat file database grouping sorting values criteria chart formulas cells spreadsheet format inputs outputs calculations charts results present
Experiences	Planning and holding an event.	
SMSC	Cultural- how has the use of data bases and spreadsheets influenced our lives?	
British Values	Rule of law- discuss how our personal data is ours and the rights around others storing and using this information.	
School Values	Inclusive- how can we make sure our event we plan includes everybody?	

MEDIUM TERM PLAN

Cycle B

Cherry Tree Academy Medium Term - Computing

Autumn 1		
KS1	Computer Systems and Networks	
	Year 1	**Year 2**
	L1: What is technology? L2: What are the main parts that make up a computer? L3: How can the computer mouse be used in different ways? L4: How can we use the computer keyboard? L5: How can text be edited? L6: Why is it important to use computers responsibly?	L1: What is technology? L2: What are the main parts that make up a computer? L3: How can the computer mouse be used in different ways? L4: How can we use the computer keyboard? L5: How can text be edited? L6: Why is it important to use computers responsibly?
Key Concepts to assess	L1: Children can explain that technology is something that helps us and can locate examples of technology in the classroom. Children can explain how these technology examples help us. Children can explain where to go for help when they have concerns about content or contact online. L2: Children can name the main parts of a computer. Children can switch on and log into a computer and can use a mouse to click and drag. L3: Children can use a mouse to open a program. Children can click and drag to make objects on a screen. Children can use a mouse to create a picture. L4: Children can say what a keyboard is for. Children can type their name on a computer and save their work to a file. L5: Children can open their work from a file. Children can use the arrow keys to move the cursor and can delete letters. L6: Children can identify rules to keep themselves safe and healthy when using technology. Children can give examples of some of these rules and can discuss how we benefit from these rules.	L1: Children can explain that technology is something that helps us and can locate examples of technology in the classroom and wider community. Children can explain how different examples of technology help us. Children can explain where to go for help when they have concerns about content or contact online. L2: Children can name the main parts of a computer and explain their purpose. Children can switch on and log into a computer and can use a mouse to click and drag. Children know why passwords should be kept secure. L3: Children can use a mouse to open a program. Children can click and drag to make objects on a screen. Children can use a mouse to create a picture using two fingers on the laptop trackpad. L4: Children can say what a keyboard is for and give examples of different things that could be produced. Children can type their own and others names on a computer and save their work to a file giving their file name a suitable name. L5: Children can open their work from a file. Children can use the arrow keys to move the cursor and can delete letters. They can use the space bar, enter key and delete buttons correctly. L6: Children know rules to keep themselves safe and healthy when using technology. Children can discuss how we benefit from these rules. Children can say who to go to and what to do if they have concerns.
Vocabulary	Technology, Computer, mouse, trackpad, keyboard, screen, double-click keyboard, typing	Technology, Computer, laptop, desktop, hard drive, mouse, trackpad, keyboard, screen, double-click, keyboard, typing, enter, spacebar, arrow keys, backspace, delete, edit
Experiences		
SMSC		
British Values	Rule of Law – Safer Internet rules	
School Values	Honest – when using technology and knowing where to go for help. Healthy – using computers responsibly and keeping our minds healthy – including what to do if we see / hear something that makes us feel worried or upset.	

Cherry Tree Academy Medium Term - Computing

Autumn 2		
KS1	Creating Media – Digital Writing	
	Year 1	**Year 2**
	L1: How can we use a computer to write? L2: How can we add and remove text on a computer? L3: What tools can we find on the toolbar and what do they do? L4: How can we make changes to the way text looks? L5: What choices have you made and why? L6: Which is better pencil or keyboard?	L1: How can we use a computer to write? L2: How can we add and remove text on a computer? L3: What tools can we find on the toolbar and what do they do? L4: How can we make changes to the way text looks? L5: What choices have you made and why? L6: Which is better pencil or keyboard?
Key Concepts to assess	L1: Children can open a word processor. Children can recognise the keys on a keyboard. L2: Children can use the keyboard to enter text into a computer. Children can use letter, number and space keys. Children can use backspace to remove text. L3: Children can type capital letters. Children can identify the toolbar and use bold, italic and underline. L4: Children can select a word by double-clicking. Children can select all of the text by clicking and dragging. Children can change the font. L5: Children can say what tool they used the change the text. Children can use the undo to remove changes. L6: Children can make changes to text on a computer. Children can explain the differences between typing and writing. Children can say why they prefer typing or writing.	L1: Children can open a word processor. Children can recognise the keys on a keyboard and identify and find keys on a keyboard. L2: Children can use the keyboard with more speed to enter text into a computer. Children can use letter, number and space keys. Children can use backspace and the delete keys to remove text. L3: Children can type capital letters. Children can identify the toolbar and use bold, italic and underline. Children can explain what the keys they have already explored do. L4: Children can select a word by double-clicking. Children can select all of the text by clicking and dragging. Children can change the font and make careful choices about the fonts they choose to use. L5: Children can say what tool they used the change the text. Children can decide if their choices have improved their writing. Children can use the undo to remove changes. L6: Children can make changes to text on a computer. Children can explain the differences between typing and writing. Children can say why they prefer typing or writing giving reasons for their choices and recognizing that this may change depending on the situation.
Vocabulary	Word processor, keyboard, keys, letters, type, Numbers, space, backspace, text cursor, Capital letters, toolbar, bold, italic, underline, Mouse, select, font, Undo, font, Compare	Word processor, keyboard, keys, letters, type, Numbers, space, backspace, text cursor, Capital letters, toolbar, bold, italic, underline, Mouse, select, font, Undo, redo, font, format, Compare
Experiences		
SMSC		
British Values		
School Values	Resilient – when learning to type.	

Cherry Tree Academy Medium Term - Computing

Spring 1		
KS1	Programming - BeeBots	
	Year 1	**Year 2**
	L1: What do the buttons on a BeeBot do? L2: Can you follow and give instructions? L3: How can we combine forwards and backwards commands to make a sequence? L4: How can we combine four direction commands to make a sequence. L5: How can we plan a simple program? L6: Is there more than one solution to a problem?	L1: What do the buttons on a BeeBot do? L2: Can you follow and give instructions? L3: How can we combine forwards and backwards commands to make a sequence? L4: How can we combine four direction commands to make a sequence. L5: How can we plan a simple program? L6: Is there more than one solution to a problem?
Key Concepts to assess	L1: Children can predict the outcome of a command on a device. Children can match a command to an outcome. Children can run a command on a device. L2: Children can follow simple instructions. Children can give simple directions. L3: Children can compare forwards and backwards movements. Children can start a sequence from the same place. Children can predict the outcome of a sequence involving forwards and backwards commands. L4: Children can compare left and right turns. Children can experiment with turn and move commands to move a robot. Children can predict the outcome of a sequence involving up to four commands. L5: Children can explain what their program should do and choose the order of commands in a sequence. Children can debug their program. L6: Children can identify more than one solution. Children can plan two programs and use them to get to the same place.	L1: Children can predict the outcome of a command on a device and say why they think this. Children can match a command to an outcome. Children can run a command on a device explaining the process to another person. L2: Children can follow more complex instructions. Children can give clear instructions and directions to others. L3: Children can compare forwards and backwards movements. Children can start a sequence from the same place. Children can predict the outcome of a sequence involving forwards and backwards commands and explain their thinking to others. L4: Children can compare left and right turns and use the correct vocabulary to describe the turns. Children can use turn and move commands to move a robot. Children can predict the outcome of a sequence involving four or more commands and explain the thinking to others. L5: Children can plan their program carefully and explain what their program should do. Children can choose the order of commands in a sequence. Children can debug their program. L6: Children can identify several possible solutions. Children can plan two programs and use them to get to the same place.
Vocabulary	Forwards, backwards, turn, clear, go, commands, Instructions, directions, Left, right, algorithm, program, Route, plan	Forwards, backwards, turn, right turn, half turn, full turn, clear, go, commands, Instructions, directions, Left, right, algorithm, program, Route, plan, solution
Experiences		
SMSC		
British Values		
School Values	Honest – when planning solutions and making predictions.	

Cherry Tree Academy Medium Term - Computing

Spring 2		
KS1	Creating Media – Digital Painting	
	Year 1	**Year 2**
	L1: How can we paint using computers? L2: How can the shape and line tools be used within a paint program? L3: Can you make careful choices to recreate a piece of artwork? L4: Why did I choose that? L5: Can you create your own painting using a computer? L6: What are the differences between painting on a computer and painting on paper?	L1: How can we paint using computers? L2: How can the shape and line tools be used within a paint program? L3: Can you make careful choices to recreate a piece of artwork? L4: Why did I choose that? L5: Can you create your own painting using a computer? L6: What are the differences between painting on a computer and painting on paper?
Key Concepts to assess	L1: Children can make marks on a screen and explain which tools they used. Children can draw lines on a screen and explain which tools they have used. Children can use the paint tools to draw a picture. L2: Children can make marks with the square and line tools. Children can use the shape and line tools effectively. Children can use the shape and line tools to recreate the work of an artist. L3: Children can choose appropriate shapes. Children can make appropriate colour choices. Children can create a picture in the style of an artist. L4: Children can explain that different paint tools do different jobs. Children can choose appropriate paint tools and colours to recreate the work of an artist. L5: Children can make dots of colour on a page. Children can change the colour and brush sizes. Children can use dots of colour to create a picture in the style of an artist. L6: Children can explain that pictures can be made in lots of different ways. Children can spot the differences between painting on a computer and on paper. Children can say whether they prefer painting using a computer or using paper.	L1: Children can make marks and lines on a screen and explain which tools they used. Children can use the paint tools to draw a picture with increasing control. L2: Children can make marks with the square and line tools. Children can use the shape and line tools effectively and explain the choices they have made and why they made them. Children can use the shape and line tools to recreate the work of an artist. L3: Children can choose appropriate shapes and justify their choices. Children can make appropriate colour choices and justify their choices. Children can create a picture in the style of an artist. L4: Children can explain that different paint tools do different jobs. Children can choose appropriate paint tools and colours to recreate the work of an artist. Children can say which tools were helpful and why. L5: Children can make dots of colour on a page. Children can change the colour and brush sizes and explain the choices they make and why. Children can use dots of colour to create a picture in the style of an artist independently. L6: Children can explain that pictures can be made in lots of different ways. Children can spot the differences and similarities between painting on a computer and on paper. Children can say whether they prefer painting using a computer or using paper and recognise that this may change depending on the situation.
Vocabulary	paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, Henri Matisse, Wassily Kandinsky, feelings, brush style, Georges Seurat, pointillism, brush size, like, prefer, dislike	paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, Henri Matisse, Wassily Kandinsky, feelings, brush style, Georges Seurat, pointillism, brush size, like, prefer, dislike, similar, different, evaluate
Experiences		
SMSC	Spiritual – reflecting on art and how it makes us feel. Cultural – art from different countries and backgrounds.	
British Values	Mutual respect – differences in art	
School Values	Honest – when evaluating work and expressing opinions. Considerate – when evaluating work and expression opinions.	

Cherry Tree Academy Medium Term - Computing

Summer 1		
KS1	Data and Information – Grouping Data	
	Year 1	**Year 2**
	L1: Can you label and match objects? L2: How can we group and count objects? L3: How can we describe objects in different ways? L4: How can we make different groups? L5: How can we compare different groups of objects? L6: How can we answer questions about groups of objects?	
Key Concepts to assess	L1: Children can describe objects using labels and can match objects to groups. Children can identify the label for a group of objects. L2: Children can count and group objects. L3: Children can describe an object. Children can describe a property of an object. Children can find objects with similar properties. L4: Children can group similar objects. Children can group objects in more than one way. Children can count how many objects share a property. L5: Children can choose how to group objects. Children can describe groups of objects. Children can record how maty objects are in a group. L6: Children can decide how to group objects to answer a question. Children can compare groups of objects. Children can record and share what they have found.	L1: Children can describe objects using labels and can match objects to groups. Children can identify the label for a group of objects and explain how they have been grouped. L2: Children can count and group objects. Children begin to recognise that computers can't do things without humans inputting information. L3: Children can describe an object in terms of properties and understand what a property is. Children can find objects with similar properties. L4: Children can group similar objects with similar properties and describe how and why they have grouped them. Children can group objects in more than one way. L5: Children can choose how to group objects and explain their choices. Children can describe groups of objects in terms of properties. Children can record how maty objects are in a group. L6: Children can decide how to group objects to answer a question and can explain their thinking. Children can compare groups of objects. Children can record and share what they have found in different ways.
Vocabulary	Object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, the same	Object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, the same, compare, reason, information, similar, different
Experiences	,	
SMSC		
British Values		
School Values		

Cherry Tree Academy Medium Term - Computing

Summer 2		
KS1	Programming – Animations	
	Year 1	**Year 2**
	L1: What command should we use for a given purpose? L2: How can commands be joined together? L3: What happens when we change the value of a block? L4: How can we give each sprint their own instructions? L5: What is a project design? L6: How can we make a program?	L1: What command should we use for a given purpose? L2: How can commands be joined together? L3: What happens when we change the value of a block? L4: How can we give each sprint their own instructions? L5: What is a project design? L6: How can we make a program?
Key Concepts to assess	L1: Children can find the commands to move a sprite. Children can use the commands to move a sprite. L2: Children can use more than one block by joining them together. Children can use a start block in a program. Children can run their program. L3: Children can find blocks that have numbers. Children can change the value. Children can say what happens when the value is changed. L4: Children can show that a project can include more than one sprite. Children can delete a sprite. Children can add blocks to each of their sprites. L5: Children can choose appropriate artwork for their project. Children can decide how each sprite will move. Children can create an algorithm for each sprite. L6: Children can use sprites that match their design. Children can add programming blocks based on their algorithm. Children can test the programs they have created.	L1: Children can find the commands to move a sprite. Children can use the commands to move a sprite. Children can compare different programming tools. L2: Children can use more than one block by joining them together and can make choices about the blocks they use to create a desired outcome. Children can use a start block in a program. Children can run their program. L3: Children can find blocks that have numbers. Children can change the value. Children can predict what will happen when a value is changed and the say what happens when the value is changed. L4: Children can show that a project can include more than one sprite. Children can delete a sprite. Children can add blocks to each of their sprites and give them different instructions. L5: Children can choose appropriate artwork for their project and give reasons for their choices. Children can decide how each sprite will move. Children can create an algorithm for each sprite trying to make each sprite do something different. L6: Children can use sprites that match their design. Children can add programming blocks based on their algorithm. Children can test the programs they have created and evaluate their work.
Vocabulary	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, Block, joining, **Start** block, run, background, delete, reset, algorithm, predict, Effect, change, value, instructions, program, design	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, Block, joining, **Start** block, run, background, delete, reset, algorithm, predict, Effect, change, value, Instructions, program, appropriate, design, evaluate, improve
Experiences		
SMSC		
British Values		
School Values	Resilient – not giving up and becoming frustrated when programs do not work on the first attempts.	

Cherry Tree Academy Medium Term - Computing

LKS2	Autumn 1	
	The Internet	
	Year 3	**Year 4**
	L1: How do networks connect and why must they be protected? L2: What parts make up the internet and how do they work together? L3: How can information and websites be shared on the World Wide Web? L4: What is a website and what can we add to it? L5: Who owns content on the web and why does it matter? L6: Can we trust everything we read on the internet?	L1: How do networks connect and why must they be protected? L2: What parts make up the internet and how do they work together? L3: How can information and websites be shared on the World Wide Web? L4: What is a website and what can we add to it? L5: Who owns content on the web and why does it matter? L6: Can we trust everything we read on the internet?
Key Concepts to assess	L1: Children can describe the internet as a network of networks and demonstrate how information is shared across the internet. L2: Children can describe networked devices and how they connect, and explain that the internet provides many services. L3: Children can explain the types of media that can be shared on the World Wide Web and describe where websites are stored. L4: Children can explain what media can be found on websites and recognise that they can add content to the World Wide Web. L5: Children can explain that websites and their content are created by people and suggest who owns the content on websites. L6: Children can explain that not everything on the World Wide Web is true and why they need to think carefully before sharing content.	L1: Children can describe the internet as a network of networks, demonstrate how information is shared across the internet, and discuss why a network needs protecting. L2: Children can describe networked devices, explain how they connect to form the internet, and give examples of the many services provided by the internet. L3: Children can explain the types of media that can be shared on the World Wide Web, describe where websites are stored, and explain how websites are accessed on different devices. L4: Children can explain what media can be found on websites, recognise that they can add content, and explain how internet services can be used to create content online. L5: Children can explain that websites and their content are created by people, suggest who owns the content, and explain that there are rules to protect online content. L6: Children can explain that not everything on the World Wide Web is true, describe why some information may not be honest or accurate, and explain the consequences of unreliable content.
Vocabulary	internet, network, device, website, webpage, media, content, share, connect, rules	internet, network, device, website, webpage, media, content, ownership, protect, accuracy
Experiences		
SMSC	Social: Children develop teamwork and communication skills when collaborating on digital tasks, and learn to respect others' opinions during discussions about online content. Cultural: Children explore the global impact of the internet and how it supports cultural diversity by allowing sharing of ideas, traditions, and knowledge across countries.	
British Values	Democracy: Children discuss how the internet can give people a voice and explore how this connects to freedom of expression. The rule of law: Children understand the importance of online safety rules and copyright laws. Mutual respect and tolerance: Children learn to respect different viewpoints online and consider the impact of words and actions in digital communication.	
School Values	Honest: Children explore why it is important to be truthful and accurate when sharing information online. Considerate: Children demonstrate consideration for others when sharing and commenting on online content.	

Cherry Tree Academy Medium Term - Computing

LKS2	Autumn 2	
	Audio Production	
	Year 3	**Year 4**
	L1: How can we use input and output devices to record and play sound? L2: How can we edit our recordings to make them clearer and more engaging? L3: What makes a good podcast and how can we plan one? L4: How can we record and improve the voice tracks for our podcast? L5: How can we enhance our podcast by adding layers of sound? L6: How can we evaluate and improve our finished podcast?	L1: How can we use input and output devices to record and play sound? L2: How can we edit our recordings to make them clearer and more engaging? L3: What makes a good podcast and how can we plan one? L4: How can we record and improve the voice tracks for our podcast? L5: How can we enhance our podcast by adding layers of sound? L6: How can we evaluate and improve our finished podcast?
Key Concepts to assess	L1: Children can identify input and output devices for sound and record audio using a computer. L2: Children can re-record audio and trim simple mistakes or pauses. L3: Children can plan content for a podcast and explain how sounds can be combined. L4: Children can record voice tracks following their plan and improve simple mistakes. L5: Children can add basic sound effects or music to enhance their podcast. L6: Children can identify strengths in a podcast and suggest simple improvements.	L1: Children can identify input and output devices, record audio, and explain ownership and copyright considerations. L2: Children can re-record, trim, and inspect a soundwave view for more precise editing. L3: Children can plan engaging content for a podcast and explain saving editable projects. L4: Children can record, review, re-record, and align voice recordings accurately. L5: Children can arrange multiple sounds to achieve desired effects and explain exporting audio. L6: Children can evaluate podcasts with detail, suggest appropriate improvements, and apply edits to enhance them.
Vocabulary	audio, record, playback, podcast, voice, trim, edit, plan, sound, listen	audio, record, playback, podcast, voice, trim, edit, layer, export, copyright
Experiences		
SMSC	Spiritual: Children reflect on how sound and voice recordings can share ideas and stories creatively. Moral: Children learn about ownership and respecting copyright when using and sharing audio. Social: Children develop teamwork by working together on podcasts and listening respectfully to others' ideas.	
British Values	Rule of Law: Children understand copyright and the importance of following rules for using others' work. Mutual Respect: Children give constructive feedback and listen to others' podcasts respectfully.	
School Values	Honest: Children understand the importance of being truthful when sharing information in podcasts. Inclusive: Children include everyone's ideas when planning and creating their podcasts.	

Cherry Tree Academy Medium Term - Computing

LKS2	Spring 1	
	Programming – Repetition in shapes	
	Year 3	**Year 4**
	L1: How can I use commands to control a screen turtle and why is accuracy important? L2: How can I create and debug an algorithm in a text-based language? L3: How can I use repetition to make patterns and draw shapes? L4: How can I use and modify loops to create different shapes? L5: How can I break a task into smaller parts to create reusable procedures? L6: How can I design and program wrapping paper patterns using count-controlled loops?	L1: How can I use commands to control a screen turtle and why is accuracy important? L2: How can I create and debug an algorithm in a text-based language? L3: How can I use repetition to make patterns and draw shapes? L4: How can I use and modify loops to create different shapes? L5: How can I break a task into smaller parts to create reusable procedures? L6: How can I design and program wrapping paper patterns using count-controlled loops?
Key Concepts to assess	L1: Children can program a computer by typing basic commands and explain the effect of changing values. L2: Children can use a template to plan their program, write an algorithm for a simple letter, and test it in Logo. L3: Children can identify patterns in sequences and use a count-controlled loop to draw a repeated pattern. L4: Children can identify the effect of changing the number of repetitions in a loop and predict the outcome. L5: Children can identify steps in a real-world task, use a simple procedure in a program, and explain what a procedure does. L6: Children can design a program that includes count-controlled loops, write the program from their plan, and begin to debug it.	L1: Children can program a computer by typing commands, explain the effect of changing values, and create short code snippets for specific outcomes. L2: Children can independently write and debug an algorithm to produce given letters in Logo. L3: Children can identify and create patterns using count-controlled loops, and explain why loops make code more efficient. L4: Children can accurately predict and modify the outcome of a count-controlled loop to create a specific shape. L5: Children can decompose complex tasks into clear steps, create and name reusable procedures, and call them effectively. L6: Children can design, implement, debug, and evaluate a program that uses count-controlled loops to create a pattern of shapes.
Vocabulary	command, program, algorithm, pattern, loop, predict	command, program, algorithm, pattern, loop, predict, procedure, repetition, debug, decomposition
Experiences		
SMSC	Moral – understanding the responsible use of technology, Social – working with peers to debug and improve code, Cultural – exploring patterns inspired by different cultures' art.	
British Values	Mutual respect – supporting others in learning and sharing ideas. Rule of law – understanding the rules of coding languages and following instructions.	
School Values	Resilient – persevering with debugging code.	

Cherry Tree Academy Medium Term - Computing

LKS2	Spring 2	
	Data and information – Data Logging	
	Year 3	**Year 4**
	L1: How can data collected over time help us answer questions? L2: How can we use a computer or sensor to collect data automatically? L3: What does a data logger do and how does it collect data? L4: How can we use a computer to help us analyse data? L5: How can we plan and collect the right data to answer a question? L6: How can we use the data we've collected to answer our question?	L1: How can data collected over time help us answer questions? L2: How can we use a computer or sensor to collect data automatically? L3: What does a data logger do and how does it collect data? L4: How can we use a computer to help us analyse data? L5: How can we plan and collect the right data to answer a question? L6: How can we use the data we've collected to answer our question?
Key Concepts to assess	L1: Children can identify data that can be gathered over time and choose a data set to answer a given question. L2: Children can explain what data can be collected using sensors and identify that data from sensors can be recorded. L3: Children can recognise that a data logger collects data points at given intervals and talk about the data they have captured. L4: Children can view and sort data to find information and explain that there are different ways to view data. L5: Children can propose a question that can be answered using logged data and plan how to collect data. L6: Children can interpret data from a data logger and draw simple conclusions.	L1: Children can identify data that can be gathered over time, choose a data set to answer a question, and suggest new questions to ask using given data. L2: Children can explain what data can be collected using sensors, describe how data loggers work, and use data from a sensor to answer a given question. L3: Children can recognise that a data logger collects data points at given intervals, identify the intervals used, and talk in detail about the data captured. L4: Children can view, sort, and filter data to find key information, and explain how different ways of viewing data help us understand it better. L5: Children can propose a clear question, plan how to collect data accurately, and set up a data logger independently. L6: Children can interpret data they collected, draw conclusions from it, and explain the benefits of using a data logger.
Vocabulary	data, sensor, logger, record, analyse, question, collect, sort, interval, conclusion	data, sensor, logger, record, analyse, question, collect, interval, interpret, conclusion
Experiences		
SMSC	Children develop curiosity and reflect on how data helps us understand the world, working honestly and cooperatively with others.	
British Values	Children respect rules and procedures when collecting and analysing data, understanding why fairness and accuracy matter.	
School Values	Resilience: Children persevere when planning, collecting, and analysing data, even if results aren't as expected. Honesty: Children use data honestly and learn to report accurate findings when answering questions.	

Cherry Tree Academy Medium Term - Computing

LKS2	Summer 1	
	Creating media – Photo Editing	
	Year 3	**Year 4**
	L1: How can we change the composition of a digital image? L2: How do colours and filters affect digital images? L3: How can we use cloning tools to edit photos? L4: How can we combine images to create something new? L5: How can we create a new image by combining and editing existing images? L6: How can we improve our edited images using feedback?	L1: How can we change the composition of a digital image? L2: How do colours and filters affect digital images? L3: How can we use cloning tools to edit photos? L4: How can we combine images to create something new? L5: How can we create a new image by combining and editing existing images? L6: How can we improve our edited images using feedback?
Key Concepts to assess	L1: Children can improve an image by rotating or cropping it using photo editing software. L2: Children can explain how colour effects can change what we think or feel about an image and experiment with applying them. L3: Children can use a cloning tool to remove or duplicate parts of an image. L4: Children can copy and paste parts of images to create a simple combined image. L5: Children can plan and create an image by choosing and editing existing photos. L6: Children can review their images against simple criteria and add text to complete their project.	L1: Children can improve an image by rotating or cropping it using photo editing software and explain when editing an image may be unethical. L2: Children can explain and justify their choice of colour effects based on how they want an image to be perceived. L3: Children can use a cloning tool accurately to edit images, improving edits by refining details. L4: Children can experiment with a range of selection tools to copy between images and discuss why images might be edited. L5: Children can plan a purposeful image, combining multiple edited elements to achieve a clear goal. L6: Children can review their images against set criteria, make appropriate changes using feedback, and combine text with images effectively.
Vocabulary	rotate, crop, filter, clone, edit, image, colour, combine, copy, text	rotate, crop, filter, clone, edit, composition, manipulate, select, combine, publication
Experiences		
SMSC	Children reflect on how editing images can change perceptions and discuss when editing is honest or dishonest.	
British Values	Children learn the importance of respecting others' work by understanding ownership, copyright, and the ethical use of edited images.	
School Values	Resilience when experimenting with new editing tools; honesty when discussing whether an edited image is truthful.	

Cherry Tree Academy Medium Term - Computing

LKS2	Summer 2	
	Programming B – Repetition in Games	
	Year 3	**Year 4**
	L1: How can we use loops to create shapes in Scratch? L2: What are the differences between infinite and count-controlled loops? L3: How can we animate our names using repeated actions? L4: How can we modify a game by changing code within loops? L5: How can we design a game that uses repetition effectively? L6: How can we create and evaluate a game that uses loops?	L1: How can we use loops to create shapes in Scratch? L2: What are the differences between infinite and count-controlled loops? L3: How can we animate our names using repeated actions? L4: How can we modify a game by changing code within loops? L5: How can we design a game that uses repetition effectively? L6: How can we create and evaluate a game that uses loops?
Key Concepts to assess	L1: Children can list instructions with repetition, predict outcomes of simple code, and modify code to create a given shape. L2: Children can choose between infinite and count-controlled loops to create simple outcomes. L3: Children can design an animation using repeated actions and explain what they expect their animation to do. L4: Children can identify parts of loops that can be changed and re-use code snippets. L5: Children can design a simple game using repetition and explain what their game will do. L6: Children can build their game following their design and evaluate what went well.	L1: Children can list instructions with repetition, predict and explain the outcomes of more complex code snippets, and modify code to achieve a precise outcome. L2: Children can confidently select between infinite and count-controlled loops, justifying their choice for a purpose. L3: Children can design animations using multiple loops running at the same time, explaining the intended outcome of each repeated sequence. L4: Children can modify existing loops and explain the effect of their changes on the game's behaviour. L5: Children can create detailed designs for a game that uses repetition effectively, evaluating and refining their plans before building. L6: Children can build a game that closely follows their design, refine their algorithm during development, and evaluate their work against their design goals.
Vocabulary	loop, repeat, code, sprite, Scratch, sequence, animation, predict, modify, game	algorithm, infinite loop, count-controlled, repetition, evaluate, refine, sprite, animation, sequence, program
Experiences		
SMSC	Children reflect on perseverance and resilience when debugging their code, learning to support each other with positive feedback.	
British Values	Children practise mutual respect when sharing and evaluating each other's games, and learn to use online tools responsibly.	
School Values	Resilience when fixing mistakes in their code; respect when giving constructive feedback to peers.	

Cherry Tree Academy Medium Term - Computing

UKS2	Autumn 1	
	Communication and Collaboration	
	Year 5	**Year 6**
	L1: Why do computers need internet addresses to communicate? L2: How is data transferred across the internet in packets? L3: How can sharing information online help people work together? L4: What are different ways of working together online? L5: How do we communicate using technology? L6: How can we communicate responsibly online?	L1: Why do computers need internet addresses to communicate? L2: How is data transferred across the internet in packets? L3: How can sharing information online help people work together? L4: What are different ways of working together online? L5: How do we communicate using technology? L6: How can we communicate responsibly online?
Key Concepts to assess	L1: Children can explain that computers use IP addresses to communicate online and describe how addresses are used to access websites. L2: Children can explain that data travels in packets and identify the main parts of a packet. L3: Children can describe how sharing files online can help people work together. L4: Children can identify different ways of working together online and recognise the difference between public and private collaboration. L5: Children can explain different online communication methods and suggest when to use them. L6: Children can compare online communication methods and explain how to report inappropriate content.	L1: Children can confidently explain the role of agreed protocols in transferring data online and how Domain Name Servers translate addresses. L2: Children can explain how data packets move across networks and evaluate why packets are important for internet communication. L3: Children can explain how online collaboration helps people work effectively from different locations, including sharing different media types. L4: Children can evaluate public vs private online working and explain how reusing others' work can support collaboration if done responsibly. L5: Children can evaluate the effectiveness of different communication methods and choose appropriate ones for a range of scenarios. L6: Children can explain privacy risks when sharing information online and confidently describe how to report inappropriate or harmful content.
Vocabulary	IP address, internet, packet, data, share, online, media, protocol, communication, collaborate	IP address, DNS, packet, payload, protocol, privacy, collaborate, evaluate, communication, report
Experiences		
SMSC	Children reflect on their responsibility when communicating online and the impact of their actions on others.	
British Values	Children learn about individual liberty and mutual respect by understanding privacy and responsible communication online.	
School Values	Honesty when sharing information online; compassion when supporting peers to use the internet responsibly.	

Cherry Tree Academy Medium Term - Computing

UKS2	Autumn 2	
	Web Page Creation	
	Year 5	**Year 6**
	L1: What makes a website effective and engaging? L2: How can I plan and design my own web page? L3: Why do copyright and fair use matter when creating a website? L4: How can I build and improve a web page for different devices? L5: Why is it important to plan a website's navigation? L6: What should I consider when linking to other people's content?	L1: What makes a website effective and engaging? L2: How can I plan and design my own web page? L3: Why do copyright and fair use matter when creating a website? L4: How can I build and improve a web page for different devices? L5: Why is it important to plan a website's navigation? L6: What should I consider when linking to other people's content?
Key Concepts to assess	L1: Children can explore a website, discuss the different media used, and explain that websites are written in HTML. L2: Children can identify common web page features, suggest media to include, and draw a web page layout. L3: Children can explain why copyright-free images should be used, find them, and describe 'fair use'. L4: Children can add content to a web page, preview it, and suggest edits for different devices. L5: Children can explain what a navigation path is, why it's useful, and create multiple web pages linked with hyperlinks. L6: Children can explain the implications of linking to others' content and create hyperlinks to it.	L1: Children can confidently review a website's structure and evaluate how effectively different media are used, recognising HTML as the coding language behind websites. L2: Children can plan detailed web pages that meet a clear purpose and explain design choices. L3: Children can explain copyright and fair use, justify why images must be copyright-free, and apply this understanding to select and reference images appropriately. L4: Children can create content-rich web pages, evaluate them on multiple devices, and make effective edits for user experience. L5: Children can plan complex navigation structures for websites, create multiple linked pages, and evaluate how effectively they support navigation. L6: Children can explain ethical and legal considerations of linking to others' work, create appropriate hyperlinks, and evaluate overall website user experience
Vocabulary	website, web page, layout, HTML, media, hyperlink, copyright, fair use, navigation, preview	website, HTML, copyright, navigation path, hyperlink, evaluate, fair use, structure, responsive, user experience
Experiences		
SMSC	Children consider ethical issues around ownership and responsible online behaviour when creating web content.	
British Values	Children learn about the rule of law and respect for others by understanding copyright, fair use, and responsible linking online.	
School Values	Respect for other people's work and honesty when using and linking to content.	

Cherry Tree Academy Medium Term - Computing

UKS2	Spring 1	
	Programming A – Variables in Games	
	Year 5	**Year 6**
	L1: What is a variable, and how can it change in a program? L2: Why do we use variables in programming? L3: How can I improve a game using variables? L4: How can I design my own game using variables? L5: How can I turn my design into working code? L6: How can I improve and share my game with others?	L1: What is a variable, and how can it change in a program? L2: Why do we use variables in programming? L3: How can I improve a game using variables? L4: How can I design my own game using variables? L5: How can I turn my design into working code? L6: How can I improve and share my game with others?
Key Concepts to assess	L1: Children can identify examples of information that is variable, explain that a variable can change, and recognise that variables can hold numbers or letters. L2: Children can identify a variable as a placeholder for a single value, explain that it has a name and value, and recognise that its value can change. L3: Children can decide where to change a variable in a program, use an event to set a variable, and recognise how a variable's value can be used. L4: Children can choose artwork for their project, create algorithms, and explain their design choices. L5: Children can create artwork, choose meaningful names for variables, and test their code. L6: Children can identify ways to improve their game, use variables to extend it, and share their work with others.	L1: Children can confidently define a variable as something that can change, give examples in real life and programs, and explain how variables can hold numbers or letters. L2: Children can explain why naming variables clearly is important, identify variables as placeholders for single values, and demonstrate how to change them within a program. L3: Children can predict and explain how changing a variable will affect a game, use events effectively to update variables, and comment on how variables are used in their program. L4: Children can design detailed sprites and backgrounds, plan precise algorithms, and justify their design decisions. L5: Children can implement their design accurately, choose meaningful variable names, and debug their code effectively. L6: Children can evaluate and refine their project independently, add new variables to extend functionality, and give constructive feedback on others' games.
Vocabulary	variable, value, program, algorithm, sprite, event, debug, score, design, test	variable, value, algorithm, placeholder, event, debug, evaluate, design, project, extend
Experiences		
SMSC	Children reflect on how creativity and technology combine to create enjoyable and purposeful projects, and develop perseverance when facing challenges.	
British Values	Children learn to respect others' work by providing constructive feedback and understand honesty by acknowledging the importance of original ideas and fair use.	
School Values	Resilience in debugging code and respect when evaluating classmates' projects.	

Cherry Tree Academy Medium Term - Computing

UKS2	Spring 2	
	Data and information – Introduction to spreadsheets	
	Year 5	**Year 6**
	L1: How can I collect and organise data in a spreadsheet? L2: How can I structure and format data in a spreadsheet? L3: How can I use formulas to calculate data in a spreadsheet? L4: How can I apply and duplicate formulas in a spreadsheet? L5: How can I plan an event and calculate costs using a spreadsheet? L6: How can I present data clearly using charts and tables?	L1: How can I collect and organise data in a spreadsheet? L2: How can I structure and format data in a spreadsheet? L3: How can I use formulas to calculate data in a spreadsheet? L4: How can I apply and duplicate formulas in a spreadsheet? L5: How can I plan an event and calculate costs using a spreadsheet? L6: How can I present data clearly using charts and tables?
Key Concepts to assess	L1: Children can collect data, suggest how to structure it, and enter it into a spreadsheet. L2: Children can explain what an item of data is, choose an appropriate format for cells, and apply formatting in a spreadsheet. L3: Children can explain which data types can be used in calculations, construct simple formulas, and identify that changing inputs changes outputs. L4: Children can calculate data using basic operations, create formulas including ranges of cells, and apply formulas to multiple cells by duplicating. L5: Children can use a spreadsheet to answer questions, explain why organising data is important, and apply formulas to calculate costs for an event. L6: Children can produce simple charts, use charts to show answers to questions, and suggest when to use tables or charts.	L1: Children can confidently collect and organise data in a logical structure, and enter it accurately into a spreadsheet. L2: Children can select appropriate cell formats to make data clearer, explain the purpose of formatting, and apply consistent formatting throughout their spreadsheet. L3: Children can construct and edit formulas using cell references, explain how formulas produce calculated data, and predict the effect of changing inputs. L4: Children can efficiently calculate data using a range of operations, create formulas with cell ranges, and duplicate formulas across rows or columns. L5: Children can create a well-organised spreadsheet to plan and calculate event costs, use formulas effectively, and interpret results to answer questions. L6: Children can produce clear and accurate charts, use them to answer questions, and justify when it is best to use a chart or table.
Vocabulary	spreadsheet, data, cell, formula, chart, calculate, organise, format, table, question	spreadsheet, data, formula, range, duplicate, chart, table, organise, calculate, present
Experiences		
SMSC	Children develop responsibility and reflection as they collect, structure, and interpret data to plan events.	
British Values	Children explore fairness through comparing costs and choices, understanding how to use data honestly and accurately.	
School Values	Honesty when presenting data and resilience when correcting mistakes in spreadsheets.	

Cherry Tree Academy Medium Term - Computing

UKS2	Summer 1 Creating media – 3D Modelling	
	Year 5	**Year 6**
	L1: What can I do to create and explore 3D shapes on a computer? L2: How do I modify 3D objects digitally? L3: What skills do I need to combine and arrange objects to create a 3D name badge? L4: Can I use 3D modelling tools to design and make a desk tidy? L5: Why do architects use 3D planning and how can I plan my own 3D model? L6: What steps can I take to create, evaluate, and improve my own 3D model?	L1: What can I do to create and explore 3D shapes on a computer? L2: How do I modify 3D objects digitally? L3: What skills do I need to combine and arrange objects to create a 3D name badge? L4: Can I use 3D modelling tools to design and make a desk tidy? L5: Why do architects use 3D planning and how can I plan my own 3D model? L6: What steps can I take to create, evaluate, and improve my own 3D model?
Key Concepts to assess	L1: Children can add 3D shapes to a project, view them from different perspectives, and move them relative to each other. L2: Children can resize, lift/lower, and recolour 3D objects. L3: Children can rotate, duplicate, and group 3D objects to create a 3D name badge. L4: Children can accurately size and combine 3D objects, using placeholders to create holes. L5: Children can analyse 3D models, choose appropriate shapes, and plan a design. L6: Children can construct a 3D model from their plan, explain how it could be improved, and make modifications.	L1: Children can confidently add and arrange complex 3D shapes, adjusting perspectives to check accuracy. L2: Children can efficiently resize objects across three dimensions, lift/lower with precision, and recolour objects purposefully. L3: Children can rotate, duplicate, and group multiple objects with accuracy, creating a detailed name badge. L4: Children can size and combine objects accurately to design practical 3D items, using placeholders to create precise cut-outs. L5: Children can evaluate 3D models, identify shapes in real-world structures, and plan creative, realistic designs. L6: Children can construct a detailed 3D model, evaluate it thoughtfully, and refine it to meet design goals.
Vocabulary	3D shape, model, rotate, resize, lift, group, duplicate, recolour, placeholder, combine	3D model, CAD, architecture, explode, resize, placeholder, combine, modify, evaluate, improve
Experiences		
SMSC	Children develop creativity and problem-solving by designing practical 3D models for real-world purposes.	
British Values	Children learn to respect others' ideas when evaluating each other's work, promoting collaboration and constructive feedback.	
School Values	Creativity when designing, and resilience when refining their models to improve them.	

Cherry Tree Academy Medium Term - Computing

UKS2	Summer 2	
	Using the micro:bit for primary to secondary transition	
	Year 5	**Year 6**
	L1: How can I use a micro:bit to create a sports counter? L2: Can I design a countdown timer with a micro:bit? L3: What does iteration mean and how can I use it for a countdown program? L4: How can I measure the strength of a basketball throw using the micro:bit?	L1: How can I use a micro:bit to create a sports counter? L2: Can I design a countdown timer with a micro:bit? L3: What does iteration mean and how can I use it for a countdown program? L4: How can I measure the strength of a basketball throw using the micro:bit?
Key Concepts to assess	L1: Children can plan an algorithm to create a simple sports counter using inputs and variables. L2: Children can create and test a countdown timer on the micro:bit using variables and sequences. L3: Children can modify existing code using true and false statements and if…else commands to improve a program. L4: Children can evaluate their micro:bit programs for effectiveness and suggest improvements to make them more accurate or efficient.	L1: Children can confidently design and implement a sports counter algorithm, using inputs and variables effectively, and critically evaluate their program's performance. L2: Children can create and debug a countdown timer with true/false logic and if…else commands, understanding how Boolean variables affect their program. L3: Children can define iteration, modify a program using count-controlled loops, and create a countdown using FOR loops. L4: Children can define and use functions, modify programs to capture data, and create a micro:bit program to measure basketball throw strength, visualising the data collected.
Vocabulary	micro:bit, input, variable, algorithm, code, debug, LED, counter, timer, evaluate	iteration, count-controlled loop, FOR loop, function, Boolean, true, false, modify, efficiency, data
Experiences		
SMSC	Children demonstrate creativity and perseverance when designing and testing their micro:bit programs for real-world sports scenarios.	
British Values	Children demonstrate creativity and perseverance when designing and testing their micro:bit programs for real-world sports scenarios.	
School Values	Resilience when debugging programs, and honesty when evaluating the effectiveness of their code.	