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	