Whole School Curriculum Progression: Computing

Y3 Autumn	Y3 Spring	Y3 Summer
Connecting systems & networks - Connecting Computers • Explain how digital devices function • Identify input and output devices • Recognise how digital devices can change the way we work • Explain how a computer network can be used to share information • Explore how digital devices can be connected • Recognise the physical components of a network **Creating Media - Stop Frame Animation** • Explain that animation is a sequence of drawings or photographs • Relate animated movement with a sequence of images • Plan an animation • Identify the need to work consistently and carefully • Review and improve an animation • Evaluate the impact of adding other media to an animation	**Programming - Sequencing Sounds** • Explore a new programming environment (Scratch) • Identify that commands have an outcome • Explain that a program has a start • Recognise that a sequence of commands can have an order • Change the appearance of my project • Create a project from a task description **Creating Media - Desktop Publishing** • Recognise how text and images convey information • Recognise that text and layout can be edited • Choose appropriate page settings • Add content to a desktop publishing publication • Consider how different layouts can suit different purposes • Consider the benefits of desktop publishing	**Programming - Events & Actions** • Explain how a sprite moves in an existing project • Create a program to move a sprite in four directions • Adapt a program to a new context • Develop my program by adding features • Identify and fix bugs in a program • Design and create a maze-based challenge **Data & Information - Branching Databases** • Create questions with yes/no answers • Identify the attributes needed to collect data about an object • Create a branching database • Explain why it is helpful for a database to be well structured • Plan the structure of a branching database • Independently create an identification tool
Online Safety • Self-image and identity • Online reputation • Online relationships	**Online safety** • Online bullying • Managing online information	**Online Safety** • Health, well-being & lifestyle • Privacy & security • Copyright & Ownership

Y4 Autumn	Y4 Spring	Y4 Summer
Connecting systems & networks – The Internet • Describe how networks physically connect to other networks • Recognise how networked devices make up the internet • Outline how websites can be shared via the World Wide Web (WWW) • Describe how content can be added and accessed on the World Wide Web (WWW) • Recognise how the content of the WWW is created by people • Evaluate the consequences of unreliable content	**Programming – Repetition in shapes** • Identify that accuracy in programming is important • Create a program in a text-based language • Explain what 'repeat' means • Modify a count-controlled loop to produce a given outcome • Decompose a task into small steps • Create a program that uses count-controlled loops to produce a given outcome	**Creating Media – Photo Editing** • Explain that the composition of digital images can be changed • Explain that colours can be changed in digital images • Explain how cloning can be used in photo editing • Explain that images can be combined • Combine images for a purpose • Evaluate how changes can improve an image
Creating Media – Audio Production • Identify that sound can be recorded • Explain that audio recordings can be edited • Recognise the different parts of creating a podcast project • Apply audio editing skills independently • Combine audio to enhance my podcast project • Evaluate the effective use of audio	**Data & Information – Data Logging** • Explain that data gathered over time can be used to answer questions • Use a digital device to collect data automatically • Explain that a data logger collects 'data points' from sensors over time • Recognise how a computer can help us analyse data • Identify the data needed to answer questions • Use data from sensors to answer questions	**Programming – Repetition in games** • Develop the use of count-controlled loops in a different programming environment • Explain that in programming there are infinite loops and count controlled loops • Develop a design that includes two or more loops which run at the same time • Modify an infinite loop in a given program • Design a project that includes repetition • Create a project that includes repetition
Online Safety • Self-image and identity • Online reputation • Online relationships	**Online safety** • Online bullying • Managing online information	**Online Safety** • Health, well-being & lifestyle • Privacy & security • Copyright & Ownership

Respect **Responsibility** **Reflection** **Resilience**

Y5 Autumn	Y5 Spring	Y5 Summer
Connecting systems & networks – Systems & Searching • Explain that computers can be connected together to form systems • Recognise the role of computer systems in our lives • Experiment with search engines • Describe how search engines select results • Explain how search results are ranked • Recognise why the order of results is important, and to whom **Creating Media – Video Production** • Explain what makes a video effective • Identify digital devices that can record video • Capture video using a range of techniques • Create a storyboard • Identify that video can be improved through reshooting and editing • Consider the impact of the choices made when making and sharing a video	**Programming – Selection in physical computing** • Control a simple circuit connected to a computer • Write a program that includes count-controlled loops • Explain that a loop can stop when a condition is met • Explain that a loop can be used to repeatedly check whether a condition has been met • Design a physical project that includes selection • Create a program that controls a physical computing project **Data & Information – Flat file databases** • Use a form to record information • Compare paper and computer-based databases • Outline how you can answer questions by grouping and then sorting data • Explain that tools can be used to select specific data • Explain that computer programs can be used to compare data visually • Use a real-world database to answer questions	**Creating Media – Vector graphics** • Identify that drawing tools can be used to produce different outcomes • Create a vector drawing by combining shapes • Use tools to achieve a desired effect • Recognise that vector drawings consist of layers • Group objects to make them easier to work with • Apply what I have learned about vector drawings **Programming – Selection in quizzes** • Explain how selection is used in computer programs • Relate that a conditional statement connects a condition to an outcome • Explain how selection directs the flow of a program • Design a program which uses selection • Create a program which uses selection • Evaluate my program
Online Safety • Self-image and identity • Online reputation • Online relationships	**Online safety** • Online bullying • Managing online information	**Online Safety** • Health, well-being & lifestyle • Privacy & security • Copyright & Ownership

Y6 Autumn	Y6 Spring	Y6 Summer
Connecting systems & networks – Communication & collaboration • Explain the importance of internet addresses • Recognise how data is transferred across the internet • Explain how sharing information online can help people to work together • Evaluate different ways of working together online • Recognise how we communicate using technology • Evaluate different methods of online communication **Creating Media - Webpage Creation** • Review an existing website and consider its structure • Plan the features of a web page • Consider the ownership and use of images (copyright) • Recognise the need to preview pages • Outline the need for a navigation path • Recognise the implications of linking to content owned by other people	**Programming – Variables in Games** • Define a 'variable' as something that is changeable • Explain why a variable is used in a program • Choose how to improve a game by using variables • Design a project that builds on a given example • Use my design to create a project • Evaluate my project **Data & Information - Spreadsheets** • Create a data set in a spreadsheet • Build a data set in a spreadsheet • Explain that formulas can be used to produce calculated data • Apply formulas to data • Create a spreadsheet to plan an event • Choose suitable ways to present data	**Creating Media – 3D Modelling** • Recognise that you can work in three dimensions on a computer • Identify that digital 3D objects can be modified • Recognise that objects can be combined in a 3D model • Create a 3D model for a given purpose • Plan my own 3D model • Create my own digital 3D model **Programming – Sensing movement** • Create a program to run on a controllable device • Explain that selection can control the flow of a program • Update a variable with a user input • Use a conditional statement to compare a variable to a value • Design a project that uses inputs and outputs on a controllable device • Develop a program to use inputs and outputs on a controllable device
Online Safety • Self-image and identity • Online reputation • Online relationships	**Online safety** • Online bullying • Managing online information	**Online Safety** • Health, well-being & lifestyle • Privacy & security • Copyright & Ownership

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Area	LKS2	UKS2
Computing Systems & Networks	**Y3 Connecting computers**: Identifying that digital devices have inputs, processes and outputs and how devices can be connected to make networks.	**Y5 Systems & Searching**: Recognising IT systems in the world and how some can enable searching on the internet.
	Y4 The internet: Recognising that the internet is a network of networks including the WWW, and why we should evaluate online content.	**Y6 Communication and collaboration**: Exploring how data is transferred by working collaboratively online.
Creating Media	**Y3 Stop-frame animation:** Capturing and editing digital still images to produce a stop frame animation that tells a story.	**Y5 Video production:** Planning, capturing, and editing video to produce a short film.
	Y4 Audio production: Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**Y6 Webpage creation**: Designing and creating webpages, giving consideration to copyright, aesthetics and navigation.
Programming A	**Y3 Sequencing sounds**: Creating sequences in a block-based programming language to make music.	**Y5 Selection in physical computing**: Exploring conditions and selection using a programmable microcontroller.
	Y4 Repetition in shapes: Using a text-based programming language to explore count-controlled loops when drawing shapes.	**Y6 Variables in games:** Exploring variables when designing and coding a game.
Programming B	**Y3 Events and actions in programs:** Writing algorithms and programs that use a range of events to trigger sequences of actions.	**Y5 Selection in quizzes:** Exploring selection in programming to design and code an interactive quiz.
	Y4 Repetition in games: Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	**Y6 Sensing movement:** Designing and coding a project that captures inputs from physical devices.
Data & Information	**Y3 Branching databases:** Building and using branching databases to group objects using yes/no questions.	**Y5 Flat-file databases**: Using a database to order data and create charts to answer questions
	Y4 Data logging: Recognising how and why data is collected over time, before using data loggers to carry out an investigation	**Y6 Introduction to spreadsheets**: Answering questions by using spreadsheets to organise and calculate data.
Creating Media	**Y3 Desktop publishing:** Creating documents and modifying text, images and page layouts for a specific purpose.	**Y5 Introduction to vector graphics**: Creating images in a drawing program by using layers and groups of objects.
	Y4 Photo editing: Manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled,	**Y6 3D modelling:** Planning, developing and evaluating 3D computer models of physical objects.