

Y5 Computing

Coding			
Spring 2 (6 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS	GOLDBLOCKS WORDS	STEP-ON WORDS	By the end of this unit, the pupils should know that:
<p>Algorithm - A precise step by step set of instructions used to solve a problem or achieve an objective.</p> <p>Debug\ Debugging - Fixing code that has errors so that the code will run the way it was designed.</p>	<p>Decomposition - A method of breaking down a task into manageable components.</p> <p>Efficient - In coding, simplified code runs faster and uses less processing memory, it is said to be more efficient.</p> <p>Nesting - When coding commands are put inside other commands. These commands only run when the outer command runs.</p> <p>Variable - A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.</p>	<p>Abstraction - A way of de-cluttering and removing unnecessary details to get a program functioning.</p> <p>Concatenation - The action of linking a mixture of strings, variable values and numbers together in a series.</p> <p>Function - A block or sequence of code that you can access when you need it, so you don't have to rewrite the code repeatedly. Instead, you simply 'call' the function each time you want it.</p>	<ul style="list-style-type: none"> To begin to simplify code. To create a playable game. To understand what a simulation is. To know what decomposition and abstraction are in computer science. To take a real-life situation, decompose it and think about the level of abstraction. To understand how to use friction in code. To begin to understand what a function is and how functions work in code. To understand what the different variables types are and how they are used differently. To understand how to create a string. To understand what concatenation is and how it works.
"Bridging Back" (previous years/cross-curricular content) Year 1 – Coding, Lego Builders, Maze Explorers Year 2 – Coding, Questioning Year 3 – Coding, Branching Databases Year 4 – Coding, Logo, Animation			"Bridging Forward" (future years/cross curricular content) Year 6 – Coding, Binary

Y5 Computing

Online Safety			
Summer 1 (4 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS	GOLDBLOCKS WORDS	STEP-ON WORDS	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To gain a greater understanding of the impact that sharing digital content can have. To review sources of support when using technology and children's responsibility to one another in their online behaviour. To know how to maintain secure passwords. To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. To learn about how to reference sources in their work. To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. To ensure reliability through using different methods of communication.
<p>Password - The practice of sending email pretending to be from reputable companies in order to persuade individuals to reveal personal information, such as passwords and credit cards numbers.</p> <p>Personal information - Identifying information about yourself such as your name, address and telephone number.</p>	<p>Encrypt - The translation of data into a secret code to achieve data security.</p> <p>Identity theft - When someone pretends to be another person online. It can be done for financial gain or to steal others' private information.</p> <p>Malware - Software that is specifically designed to disrupt, damage, or gain unauthorised access to a computer system.</p> <p>Reliable source - A source of information that provides thorough, well-reasoned details based on valid evidence.</p>	<p>Citation - Making reference to the original source of a piece of information quotation or image.</p> <p>Creative Commons Licence - A non-profit organisation who provide free licences for creators to use. If an image has a CC licence, you may usually use the image for non-commercial purposes. You must still give credit to the original creator of the image.</p> <p>Phishing - The practice of sending email pretending to be from reputable companies in order to persuade individuals to reveal personal information, such as passwords and Password credit cards numbers.</p>	
"Bridging Back" (previous years/cross-curricular content) Year 1 – Online Safety, Technology Outside School Year 2 – Online Safety, Effective Searching Year 3 – Online Safety, Email Year 4 – Online Safety, Effective Searching			"Bridging Forward" (future years/cross curricular content) Year 6 – Online Safety, Blogging

Y5 Computing

Spreadsheets				
Summer 2 (5 lessons)				
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 				
Key Vocabulary			Key Knowledge	
ANCHOR WORDS Data - A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making. Spreadsheet - A computer program that represents data in cells in a grid of rows and columns. Any cell in the grid may contain either data or a formula that describes the value to be inserted based on the values in other cells.	GOLDILOCKS WORDS Format - The way that text looks. Formatting cells is helpful for interpreting a cell's contents for example you might want to format a cell to show a fraction e.g. $4\frac{1}{2}$ or include units such as £ or \$. Formula Bar - An area of the spreadsheet into which formulae can be entered using the '=' sign to open the formula. Variable - Used in computing to keep track of things that can change while a program is running.	STEP-ON WORDS Totalling tool - Adds up the value of every cell above it, next to it or diagonal to it according to which total tool is selected.	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To use formulae within a spreadsheet to convert measurements of length and distance. To use the count tool to answer hypotheses about common letters in use. To use a spreadsheet to model a real-life problem. To use formulae to calculate area and perimeter of shapes. To create formulae that use text variables. To use a spreadsheet to help plan a school cake sale. 	
"Bridging Back" (previous years/cross-curricular content) Year 1 – Spreadsheets, Pictograms Year 2 – Spreadsheets, Questioning Year 3 – Spreadsheets, Graphing Year 4 – Spreadsheets			"Bridging Forward" (future years/cross curricular content) Year 6 - Spreadsheets	

Y5 Computing

Databases			
Autumn 2 (3 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS Collaborative - Produced by, or involving, two or more parties working together.	GOLDILOCKS WORDS Field - A heading in a database record against which information is entered. Statistics - The study and manipulation of data, including ways to gather, review, analyse, and draw conclusions from data.	STEP-ON WORDS Database Report - A way of producing a written paragraph that incorporates the data from the fields and records of the database.	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To learn how to search for information in a database. To contribute to a class database. To create a database around a chosen topic.
“Bridging Back” (previous years/cross-curricular content) Year 1 – Grouping and Sorting, Pictograms Year 2 – Spreadsheets, Questioning Year 3 – Spreadsheets, Branching Databases, Graphing Year 4 – Spreadsheets			“Bridging Forward” (future years/cross curricular content) Year 6 - Spreadsheets

Y5 Computing

Game Creator			
Autumn 1 (5 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS Instructions - Detailed information about how something should be done or operated. Scene - The place where an incident in real life or fiction occurs or occurred. Theme - In this case, the subject of the game.	GOLDOCKS WORDS Evaluation - To critically examine a program. It involves collecting and analysing information about a program's activities, characteristics, and outcomes. Screenshot - An image of the data displayed on the screen of a computer or mobile device. Texture - High frequency detail or colour information on a computer-generated graphic.	STEP-ON WORDS Promotion - The publicising of a product, in this case a game, so as to increase sales or public awareness	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To plan a game. To design and create the game environment. To design and create the game quest. To finish and share the game. To self and peer evaluate.
“Bridging Back” (previous years/cross-curricular content) Year 1 – Animated Story Books Year 2 – Creating Pictures, Making Music Year 4 – Animation, Making Music			“Bridging Forward” (future years/cross curricular content)

Y5 Computing

3D Modelling			
Autumn 2 (4 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS 2D - Something that has only two dimensions; height and width. 3D - Something that has three dimensions; height, width and depth. Net - What a 3D shape would look like if it was unfolded and opened out flat. Template - Something that serves as a model for others to copy and edit.	GOLDILOCKS WORDS Design Brief - A document for a design project, defining the core details, including the goal and strategy. Pattern Fill - A tool where you can add a customised repeating pattern to the surface of the net. Points - The points on a 3D net which create the corners of the 3D shape.	STEP-ON WORDS 3D Printing - The action or process of making a physical object from a three-dimensional digital model, typically by laying down many thin layers of a material in succession. CAD – Computer aided Design - A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles.	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To explore the effect of moving points when designing. To design a 3D Model to fit certain criteria. To refine and print a model.
“Bridging Back” (previous years/cross-curricular content) Year 1 – Animated Story Books Year 4 – Animation			“Bridging Forward” (future years/cross curricular content)

Y5 Computing

Word Processing			
Spring 1 (8 lessons)			
Statutory NC Objectives KS2 Computing: <ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information 			
Key Vocabulary			Key Knowledge
ANCHOR WORDS Captions - Text under an image to provide more information about what is shown. Copy and Paste - A way of transferring words or images from one location to another.	GOLDOLOCKS WORDS Cursor - The flashing vertical line that shows your place in a Word document. Hyperlink - A clickable link from a document to another location, often a webpage. Merge cells - A tool you can use when making a table to join cells which are next to each other in columns or rows.	STEP-ON WORDS Formatting - Changing the look of a document by selecting fonts, colours and how the text is spaced or aligned. Text wrapping - A feature which helps you place and position an image neatly on a page or within a paragraph of text.	<u>By the end of this unit, the pupils should know that:</u> <ul style="list-style-type: none"> To know what a word processing tool is for. To add and edit images to a word document. To know how to use word wrap with images and text. To change the look of text within a document. To add features to a document to enhance its look and usability. To use tables within to present information.
“Bridging Back” (previous years/cross-curricular content) Year 2 – Effective Searching, Presenting Ideas Year 3 – Touch Typing, Email Year 4 – Writing for Different Audiences, Effective Searching			“Bridging Forward” (future years/cross curricular content) Year 6 - Blogging