Computing: Year 6

Vision:
Computing in Corporation Road Primary School will be progressive, building children's computing skills in the areas of 'Computer Science', 'Information Technology' and 'Digital Literacy'. We will strive to ensure that all pupils can 'understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation'. That pupils can 'analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. That pupils can 'evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems' as outlined in the National Curriculum. We want children to know the application of computing in the wider world and how this can relate to future employment prospects. Our vision is that all pupils are able to keep themselves and others safe online and know when they need support and who/where to get it from. We want all pupils to understand about their own digital presence (including the use of Social Media) and how nothing that is posted online is never really deleted.

Domains	Key Concepts
Information Technology	Computing Systems & Networks
Computer Science	Programming A and Programming B
Digital Literacy and Creating Media	Audio Media, Visual Media, Combining Audio & Visual Media and Data & Information

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Communication	3D Modelling	Wed Page Creation	Spreadsheets	Variables in Games	Sensing
Domains: - Information Technology	**Domains:** - Digital Literacy and Creating Media	**Domains:** - Digital Literacy and Creating Media	**Domains:** - Digital Literacy and Creating Media	**Domains:** - Computer Science	**Domains:** - Computer Science
Key Concepts: - Computing Systems & Networks	**Key Concepts:** - Visual Media	**Key Concepts:** - Combining Audio & Visual Media	**Key Concepts:** - Data & Information	**Key Concepts:** - Programming A	**Key Concepts:** - Programming B

End Point:
Information Technology
Pupils can use technology purposefully to organise, store and retrieve digital content including search technologies, understanding how the results are selected and ranked. They understand how computer networks, the internet and the World Wide Web work and how each of these can provide multiple services. They understand how these forms of networking help people with communication and collaboration. Pupils recognise how information technology is used beyond school, especially how it links to future employment opportunities.

End Point:
Digital Literacy and Creating Media
Pupils use technology safely, respectfully and responsibly. They understand how to keep personal information private and why it is important to do so. They understand the need to be discerning in evaluating digital content. Pupils recognise acceptable/unacceptable behaviour concerning information technology and can identify a range of ways to report their concerns.
Pupils can 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.

End Point:
Computer Science End Point
Pupils can use a variety of programming language, software and hardware to interact with the real world and solve problems. They can understand and use terms such as programming, coding, algorithm, logic, abstraction, conditions, selection and data to explain how they have solved these problems. They can design, write and debug programmes that interact with hardware and/or to solve a given problem.

- To identify how to use a search engine (complete a web search, refine a search and compare results from different search engines). - To describe how search engines select results (relate a search term to the search engine's index). - To explain how search results are ranked (suggest criteria). - To recognise when the order of results is important, and to whom (the ways they can be influenced, limitations and how they make money). - To recognise how we communicate using technology. - To evaluate different methods of online communication (may not be private).	- To use a computer to create and manipulate three-dimensional (3D) digital objects (select, move and delete a digital 3D shape). - To compare working digitally with 2D and 3D graphics (resize and change the colour of a 3D object). - To construct a digital 3D model of a physical object (rotate, position in relate to each other, select and duplicate). - To identify that physical objects can be broken down into a collection of 3D shapes (group a digital 3D shape and a placeholder to create a hole in an object). - To design a digital model by combing 3D objects (modify multiple 3D objects). - To develop and improve a digital 3D model.	- To review an existing website and consider its structure (types of media and HTML). - To plan the features of a web page (common features, media and suit purpose). - To consider the ownership and use of images (copyright) and find copy-right free images). - To recognise the need to preview pages (add content, preview and evaluate). - To outline the need for a navigation path (make multiple web pages and link them using hyperlinks). - To recognise the implications of linking to content owned by other people.	- To identify questions which can be answered using data (data headings). - To explain that objects can be described using data (apply number format to a cell and build a data set in a spreadsheet application). - To explain that formulas can be used to produce calculated data (relevance of a cell's data type and construct formula). - To apply formulas to data, including duplicating (create a formula which includes a range of cells and apply a formula to multiple cells by duplicating it). - To create a spreadsheet to plan an event. - To choose suitable ways to present data (produce a graph and use it to show the answers to questions).	- To define a 'variable' as something that is changeable (identify that variable can hold numbers or letters). - To explain why a variable is used in a program (variables have a name and value and their value can be changed). - To choose how to improve a game by using variables. - To design a project that builds on a given example (choose artwork and create algorithms). - To use my design to create a project (create artwork, chose a name and test code). - To evaluate my project (improve, extend and share).	- To create a program to run on a controllable device (test on an emulator and transfer to a controllable device). - To explain that selection can control the flow of a program (determine the flow using selection). - To update a variable with a user input (change a variable and experiment with physical inputs). - To use a conditional statement to compare a variable to a value (use an operand). - To design a project that uses inputs and outputs on a controllable device (decide what variables and design the algorithm and program flow). - To develop a program to use inputs and outputs on a controllable device (test and use a range of approaches to fix bugs).