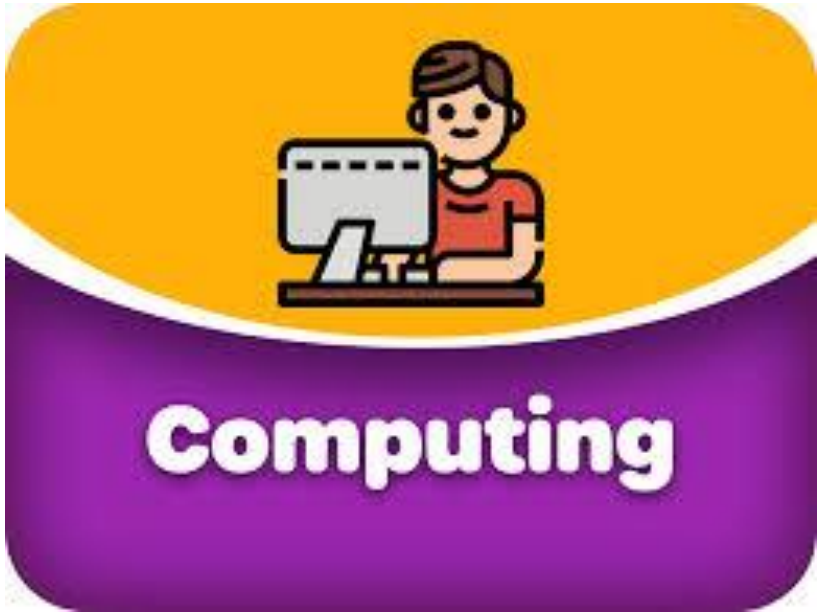
Curriculum
Subject – Whole School



Curriculum
Subject Rationale

At Wilbraham Primary school we recognise the importance of Computing. We intend to offer a curriculum that allows all children to explore and realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We want to develop a lifelong passion for Computing within our children.

Intent:	Technology is heavily relied upon now more than ever and it is essential that as educators, we provide the opportunities for children to feel well-equipped and confident in such a fast-changing world and to be aware of the positive impact, but also the dangers which come with it. We want our pupils to feel secure and informed about how to use technology safely and responsibly, as well as being able to apply the correct skills and knowledge learnt from the Computing curriculum to be able to use technology to the best of their abilities. Our aim is to inspire as many teaching staff as possible to develop their own confidence in Computing and to continue to develop their teaching practices to ensure that pupils are given the most innovative lessons which sparks further curiosity and enables a passion for wanting to engage further. We understand that technology holds great power and advantages for daily life and we understand that it is our duty as educators to promote this as positively as we can for pupils to acknowledge the incredible strength that it can play to support their futures.
Implementation:	The units of work fall into three broad categories: Computer Science (coding and computational thinking); Information Technology (spreadsheets; art, design and music; databases and graphing; writing and presenting); and Digital Literacy (communications and networks; internet and email). Our curriculum is designed to: • Build on prior learning year-on-year in order to secure children's knowledge and understanding of key concepts and skills in each area. • Allow for the repetition and overlapping of skills across units to ensure that children are secure and have had the opportunity to apply their knowledge in a variety of contexts. • Engage in events such as Safer Internet Day to maintain a high profile for Online Safety. • Revisit Online Safety in each unit throughout the year. • Ensure children's skills are built upon progressively each year to deepen their understanding. Our Computing curriculum enables our pupils to leave school with the knowledge of how to keep themselves and others safe online, digitally literate and with foundational skills to support them in the future.
Impact:	Pre-assessments through the means of quizzes provide teachers with a clear picture of children's knowledge. As do the vocabulary checks, so misconceptions can be addressed and lessons can be pitched accordingly to assess the need to do crash courses in subjects such as Spreadsheets or Coding. Assessment at the end of a unit via quizzes or a project, to assess the learnt knowledge for the subject. The way pupils share and publish their work will best show the impact of our curriculum. We also look for evidence through observing learning regularly.

Curriculum Map
Subject – EYFS

EYFS

Despite computing not being explicitly mentioned within the (EYFS) framework, there are many opportunities for young children to use technology to solve problems and produce creative outcomes.

	Children will:
EYFS	• Have access to a range of technology resources such as torches with switches, remote controlled cars, Bee bots, talking tins/buttons, voice recording toys, class iPads and IWB. • Use a range of technology resources to support learning in other areas of the curriculum. • Taught how to use the resources for different purposes e.g.- iPads to watch videos, play games, take photographs and listen to stories. • Opportunity to explore and use age appropriate software programmes (Purple Mash / Mini Mash). • Fine Motor skill activities to help build up the skills required for the keyboard / mouse control. • Areas are enriched with technology based toys for example – till, phones, remote controls etc.

Curriculum Map
Subject – Whole School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y1	1.1 Online safety (4) 1.2 Grouping and Sorting (2)	1.3 Pictograms (3) 1.4 Lego Builders (3)	1.5 Maze Explorers (4)	1.6 Animated Stories (5)	1.7 Coding (6)	1.9 Tech outside School (2)
Y2	2.1 Coding (6) *	2.2 Online Safety (3) 2.3 Spreadsheets (6 *	2.4 Questioning (5)	2.5 Effective Searching (3) 2.6 Creating Pictures (2)	2.6 continued Creating Pictures (3) 2.7 Making Music (3) **Alternative** **Music Labs**	2.8 Presenting Ideas (4)
Y3	3.1 Coding (6) *	3.2 Online Safety (3) 3.3 Spreadsheets (3)*	3.4 Touch Typing Unit (4) 3.5 Email (2)	3.5 Email (4) 3.6 Branching Database (2)	3.6 Branching Database (2) 3.7 Simulations (3) 3.8 Graphing (2)	3.9 Google Slides (6) 3.9 Powerpoint (6)

Digital Literacy
Computer Science
Information Technology

* Crash course available

Unplugged Computing

Curriculum Map
Subject – Whole School

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y4	4.1 Coding (6) *	4.2 Online Safety (4)	4.4 Writing For Different Audiences (5)	4.5 Logo (4)	4.6 Animation (3) 4.7 Effective Searching (3)	4.8 Hardware Investigators (2) 4.9 Making Music (4) Alt **BBC Microbit Music function**
Y5	5.1 Coding (6) *	5.2 Online Safety (3) 5.3 Spreadsheets (6) *	Continued 5.3 Spreadsheets (2) 5.4 Databases (4)	5.5 Game Creator (5?) this may be able to be condensed as very split up 5.6 3D Modelling (6?) may not need this long can combine lessons	5.6 Continued 3D Modelling if needed Alternative **Google Sketch Up from Waffle** 5.7 Concept Maps (4)	5.8 Word Processing Microsoft Word (8) 5.8 Word Processing Google Docs
Y6	6.1 Coding (6) *	6.2 Online Safety (3) 6.4 Blogging (4) run this alongside 6.5 once introduced they could blog at the beginning of a lesson and then start 6.5 Text Adventure (4)	Continued 6.5 Text Adventure (4) 6.6 Networks (3)	6.7 Quizzing (6)	6.8 Binary (6)	6.9 Spreadsheets Google Sheets (8)

Digital Literacy
Computer Science
Information Technology

* Crash course available

Unplugged Computing

Curriculum Map
Subject – Endpoints KS1

By the end of KS1

To Code	To Collect		To Communicate	To Connect	
Write and test simple programs. • To know that an algorithm is a set of instructions and that the order is important • To know how to identify a problem within a simple algorithm and how to fix it Plan write and test simple programs • To use logical reasoning to predict the behaviour of simple programs. • To know how to plan a sequence of instructions to achieve a purpose	Sort and group data • To know what criteria is • To know examples for a variety of criteria, e.g. eye colour, house type. • To know how to group items using a range of criteria • To know the difference between sorting and grouping • To know how to sort or group items using a range of criteria Spreadsheets • To understand what rows and columns are • To know how to enter data into cells • To add images to a spreadsheet • To know how to do simple calculations in a spreadsheets	Organise data and use to conduct simple searches • To know how to design a binary tree to sort pictures • To know how to use a database to answer more complex search questions • To know how to use the 'search' tool to find information in a database • To know spreadsheets can be used to create tables and graph • To know how to copy, cut and paste in a spreadsheet • To know how to use tools in a spreadsheet to automatically total rows and columns • To know how to create a table of data on spreadsheet • To know how to use data to create a block graph • To save, open and edit spreadsheets	Know how to use technology purposefully to create and store digital content. • To know how to paint with different colours and brushes • To know how to create shapes and fill areas • To know how to add text to a page/ image • To use simple edit tools (undo and redo Know how to use technology purposefully to create, organise, store, manipulate and retrieve digital content • To understand that you can make music / art and present it in different ways • To know how to retrieve a file to edit in a computer program. • To understand the importance of feedback in order to make improvements)	Recognise the common uses of information technology beyond school. • To identify and know how technology is used in school and beyond Understand how to communicate safely online. • To know what information is and how to keep it safe • To know how to be respectful (online and offline) • To recognise and report inappropriate behaviour (online and offline)	Understand what a Digital Footprint is and its implications. • To know that the information put or searched for online leaves a digital footprint. • To know how to keep personal data safe online • To know how to complete safe searches and select appropriate information. • To identify a variety of different devices that connect to the internet

Curriculum Map
Subject - Overview Y1

1.1 Online Safety 1.2 Grouping and Sorting	1.3 Pictograms 1.4 Lego Builders	1.5 Maze Explorers	1.6 Animated stories	1.7 Coding	1.9 Tech Outside School
Safe logins Explore Purplemash My Work Area Purple Mash Topics Purple Mash Tools --- Sorting Away From The Computer Sorting On The Computer	Data In Pictures Class Pictogram Recording Results --- Following Instructions Following and Creating Simple Instructions on the Computer Following a Recipe	Challenges 1 and 2 Challenges 3 and 4 Challenges 5 and 6 Setting More Challenges	Drawing and Creating Animation Sounds and More! Making a Story Copy and Paste	Instructions Objects and Actions Events When Code Executes Setting the Scene Using a Plan	What is Technology? Technology outside school
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				

Curriculum Map
Subject - Overview Y2

2.1 Coding	2.2 Online Safety 2.3 Spreadsheets	2.4 Questioning	2.5 Effective Searching 2.6 Creating Pictures	2.6 Continued Creating Pictures 2.7 Making Music	2.8 Presenting Ideas
Algorithms Collision Detection Using a Timer Different Object Types Buttons 'Smelly Code' Debugging	Searching and Sharing Email Using 2Respond Digital Footprint --- Reviewing prior use of spreadsheets Copying and Pasting Totalling tools Using a spreadsheet to add amounts Creating a table and block graph	Using and Creating Pictograms Asking Yes / No Questions Binary Trees Using 2Question - a ComputerBased Binary Tree Program Using 2Investigate: a NonBinary Database.	Understanding the Internet and Searching Searching the Internet Sharing Knowledge of the Internet and Effective Searching --- Introduction and Impressionism Pointillist Art	Piet Mondrian William Morris and Pattern Surrealism and eCollage --- Introducing 2Sequence Making Music Soundtracks	Presenting a Story Three Ways Presenting Ideas as a Quiz Making a Non-Fiction Fact File Making a Presentation
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				

Curriculum Map
Subject – Endpoints Year 3

By the end of LKS2

To Code	To Collect			To Communicate	To Connect
Design and write programs that accomplish specific goals. • To know how to debug multiple problems within their own algorithm • To know how to use a sequence and repetition in programs. • To begin to know how to integrate multimedia components	**Create a range of charts and graphs from data in a spreadsheet** • To know how to add and edit in a table layout. • To know how spreadsheet programs can automatically create graphs from data. • To know that different charts and graphs can represent the same data. • To know how to navigate and name cells in specific locations	**Use and debug branching databases** • To know how to sort objects using just yes and no questions. • To know how to ask appropriate and relevant questions to sort information • To know how to edit and adapt an existing branching database to accommodate new entries. • To know how to create, use and debug their own branching database • To know how to select and save images.	**Present results in a range of formats and use 'sorting' to analyse results** • To know how to enter results into a graph. • To know how to discuss and compare results. • To know how to share a graph with others. • To know how to use the sorting option to make analysis easier.	**Know how to create content that accomplishes a given goal using a variety of software on a range of devices** • To know how to order and group objects. • To know how to recognise an effective layout. • To know how to combine text and images. • To know how to lay out objects effectively • To know how to input on a keyboard (touch typing, shortcuts) • To know how to create a presentation	**Recognise how technology can provide multiple services and be used for collaboration.** • To know how to search the internet and think critically about the results that are returned. • To understand how search results are selected and ranked. • To understand how websites target your digital footprint to promote advertisements. • To learn about the meaning of age-restriction symbols and to understand why PEGI restrictions exist • To know how to send and respond to emails safely • To identify a variety of different devices that allow communication with others *(email, facetime, voice memo, phone call)*

Curriculum Map
Subject – Endpoints Year 4

By the end of LKS2

To Code	To Collect	To Communicate		To Connect	
Design and write programs that include controlling or simulating physical systems. • To know how to debug multiple problems within their own algorithms/programs using a range of software • To begin to know how to integrate multi media components • To know how variables affect an outcome	**Use formulae and combine tools in spreadsheets** • To know how to use place value in a spreadsheet, including currency and decimals • To know how to add formulae to a cell to calculate results. • To know how to use a variety of tools within a spreadsheet. • To know how to use a series of data to create line graphs. • To know how to interpret a line graph. • To know how to use a spreadsheet in a real-life situation, e.g. budgeting	**To know how to design and create a range of programs and content.** • Animate objects • Build sequences of images into animations • Tell a story through animation • To know how to create simple musical rhythms • To develop more complex pieces of music involving rhythm and melody	**To know how to create content that accomplishes a given goal and presenting information to a specific audience.** • To know how to create and debug an algorithm to create a procedure. • To know how to create and debug an algorithm that uses setpos to draw shapes. To know how to create and debug an algorithm with different colours. • To know how to create and debug an algorithm to produce text.	**Recognise how to be responsible digital citizens** • To create safe online profiles and explain why • To know how to protect themselves from online threats (phishing, malware) • To understand the term plagiarism and how to avoid it. • To identify what is a reasonable, responsible balance between active and digital behaviour • To develop and further their understanding of acceptable / unacceptable online behaviour and know	**Recognise the component parts of hardware which allow computers to join and form a network** • To know and name component parts of a computer (desk top – mouse, touch pad, screen, microphone

Curriculum Map
Subject - Overview Y3

3.1 Coding	3.2 Online Safety 3.3 Spreadsheets	3.4 Touch Typing 3.5 Email	3.6 Branching Database	3.7 Simulations 3.8 Graphing	3.9 Google Slidddes 3.9 Powerpoint
Using Flowcharts Using Timers Using Repeat Code, Test and Debug Design and Make an Interactive Scene	Safety in Numbers Fact or Fiction? Appropriate Content & Ratings --- Creating Pie Charts and Bar Graphs Using more than and Spin Button Tools Advanced Mode and Cell Addresses	Home, Top and Bottom Row Keys Home, Top and Bottom Row Keys (Consolidation) Left Keys Right Keys --- Communication Composing Emails Using Email Safely: Part 1 and part 2 Attachments Email Simulations	Introducing Databases Branching Databases Creating a branching database on the computer	What Are Simulations? Exploring a Simulation Analysing and Evaluating a Simulation --- Introducing 2Graph Using 2Graph to Solve an Investigation	Making a Presentation from a Blank Page Adding Media Adding Animation Presenting with Timings Create a Presentation --- Making a Presentation from a Blank Page Adding Media Adding Shapes and Lines Adding Animation Create a Presentation
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				

Curriculum Map
Subject - Overview Y4

4.1 Coding	4.2 Online Safety	4.4 Writing for Different Audiences	4.5 Logo	4.6 Animation 4.7 Effective Searching	4.8 Hardware Investigators 4.9 Making Music
Design, Code, Test and Debug IF Statements Co-ordinates Repeat Until and IF/ELSE Statements Number Variables Making a Playable Game	Going Phishing Beware Malware Plagiarism Healthy Screen-Time	Font Styles Using a Simulated Scenario to Produce a News Report Writing for a Campaign	Introduction to 2Logo Creating Letters using 2Logo Using the 'Repeat' Command in 2Logo Using Procedures	Animating an Object 2Animate Tools Stop Motion Animation Using a Search Engine Use Search Effectively to Answer Questions Reliable Information Sources	Hardware Parts of a Computer Understanding Music Rhythm and Tempo. Melody and Pitch Creating Music
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				

Curriculum Map
Subject – Endpoints Year 5

By the end of UKS2

To Code	To Collect	To Communicate		To Connect
Design and write programs that accomplish specific goals by decomposing them into smaller parts. • To know how to simplify sequences, selection and repetition in programs • To know how to work with variables and with various forms of inputs and outputs • To know how to generate appropriate inputs and predicted outputs to test a program • To understand how to create efficient algorithms	**Create spreadsheets to solve calculations and problems** • To know that data can be organised in different ways. • To know how to enter formulae to carry out calculations. • To know that data can be presented in a range of ways. • To know how to format tables/graphs. • To know how to enter information and search their own database • To know how to create a database and add records • To know what a field is and be able to add information • To understand that there are different ways to search a database.	**To know how to select, use and combine a variety of software (including Internet services) on a range of digital devices.** • To use concept maps to plan a series of ideas • To work collaboratively to present a range of ideas • To design a game concept including a purpose and rules for play • To evaluate a game and identify improvements	**To design content by drawing and manipulating 3D shapes.** • To know how to use 3D modelling software • To know how to draw 3D shapes. • To know how to add detail to 3D drawings. • To know how to add and manipulate 3D models. • To know how to create a complex 3D model.	**Recognise how to be responsible digital citizens and the impact it has on others** • To know how images and digital technology can be presented as false reality online • To know how to apply online safety rules to real life scenarios • To know how to keep personal data safe online – eg strong passwords • To know the importance of thinking critically about online use

Curriculum Map
Subject – Endpoints Year 6

By the end of UKS2

To Code	To Collect	To Communicate	To Connect	
Design, write and explain more complex programs that fulfil specific purposes and apply with independence • To know how to simplify sequences, selection and repetition in programs and conditional coding (functions) • To know and apply knowledge of working with variables and with various forms of inputs and outputs • To know and apply knowledge how to generate appropriate inputs and predicted outputs to test a program • To know apply use efficient algorithms	**Utilise shortcuts and formulae when creating Excel spreadsheets** • To know how spreadsheets are used in real life. • To understand which formulae to use. • To understand how to copy and paste formulae. • To know how to interpret data and make conclusions. • To know how to debug errors within a spreadsheet	**To know how to select, use and combine a variety of software (including Internet services) on a range of digital devices.** **Unit 6.4 Blogging** • To plan and create a blog • To respond to a blog **Unit 6.7 Quizzing** • To understand different styles of questioning • To choose an appropriate tool for a quiz • To develop and test a quiz	**Demonstrate being responsible digital citizens** • To know and identify the benefits and pitfalls of online relationships, location sharing services, social media • To know and identify cyber bullying and strategies to be able to deal with this. • To understand (as a Year 6 child) how and why age restrictions apply	**Recognise the component parts of a network** • Know the difference between the world wide web and the internet • To know and name network hardware and types – *eg servers and routers, internets and intranets, virtual private networks*

Curriculum Map
Subject - Overview Y5

5.1 Coding (6)	5.2 Online Safety (3) 5.3 Spreadsheets (3)	5.3 Spreadsheets (3) 5.4 Databaes (4)	5.5 Game Creator (5) (but you don't need this you can combine lessons) 5.6 3D Modelling (6?) could also combine these lessons and use google sketch up see whole school plan)	5.6 Continued 3D Modelling if needed 5.7 Concept Maps (4)	5.8/5.9 Word Processing (8)
Coding Efficiently Simulating a Physical System Decomposition and Abstraction Friction and Functions Introducing Strings Text Variables and Concatenation	Responsibilities and Support when Online Protecting Privacy Citing Sources Reliability --- Conversions of Measurements The Count Tool Formulae Including the Advanced Mode	Using Text Variables to Perform Calculations Event Planning with a Spreadsheet --- Searching a Database Creating a Class Database Creating a Topic Database	Setting the scene Creating the Game Environment The Game Quest Finishing and Sharing Evaluation --- Introducing 2Design and Make Moving Points Designing for a Purpose Printing and Making	--- Introduction to Concept Mapping Using 2Connect 2Connect Story Mode Collaborative Concept Maps	Making a Document from a Blank Page Inserting Images: Considering Copyright Editing Images Adding the Text Finishing Touches Sharing Files Presenting Information Using Tables ---
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				

Curriculum Map
Subject - Overview Y6

6.1 Coding (6)	6.2 Online Safety (3) 6.4 Blogging (4) run this along side 6.5 once introduced they could blog at the beginning of a lesson and then start 6.5	6.4 Blogging (4) run this along side 6.5 Text Adventure	6.6 Networks (3) 6.7 Quizzing (6)	6.8 Binary (6)	6.9 Spreadsheets Excel/Google Sheets (8)
Designing and making a more complex program - playable game with timer and score Using functions Flowcharts and Control Simulations User input Creating txt based adventures	Online game messaging Online Behaviour Screen time --- Identify the purpose of a blog Plan a blog Write a Blog Sharing posts and commenting	Identify the purpose of a blog Plan a blog Write a Blog Sharing posts and commenting --- Planning a story adventure Making a story-based adventure game Introducing map-based text adventures Coding a map based txt adventure	To discover what the children know about the Internet. To find out what a LAN and WAN are. To research and find out about the age of the internet. To think about what the future might hold. --- To create a picture-based quiz for young children. To explore the grammar quizzes. To develop skills in creating surveys and questionnaires	What is Binary? Counting in Binary Converting from Decimal to Binary Games States	What is a Spreadsheet? Basic Calculations Modelling Organising Data Advanced Formulae and Big Data Charts and Graphics Using a Spreadsheet to Plan a Cake Sale Using a Spreadsheet to Solve Problems
Vocab Knowledge Organiser Learning Mats	**Knowledge and Skill Recap Questions**				