

GROVE AND WESTWOOD PRIMARY SCHOOLS



COMPUTING HANDBOOK

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Our Aims:

At Grove & Westwood we aim to help children thrive and adapt in an ever changing technological world. We strive to equip children with the understanding, skills and knowledge to be prepared to take on the jobs of the future. Our purpose is to install a key understanding of how to keep themselves safe online, to become IT literate and to create programmes to aid tasks in everyday life. After an evaluation of the current curriculum, a four year rollout plan will be implemented and assessed to allow children to 'catch up' with computing skills and knowledge. We can achieve this by teaching rich and engaging computing lessons across the whole school, with clear progression throughout each strand. Understanding the need for our children will be paramount when planning, we intend to plan our internet safety units around their current life situations and share this with all key stakeholders. Our IT and computing science units will be planned to allow children to have access to knowledge which will give them every opportunity to pursue a career in an ever changing and ever important computing environment outside of their immediate surroundings.

Intent:

Develop a mastery of the following **skills**:

- Computing skills stated in the National Curriculum
- Keeping themselves and others safe online and understanding how to interact with others online.
- Understanding how and when to use information technology for a purpose.
- Use algorithms and pieces of code.
- Modify algorithms and pieces of code to serve a specific purpose
- Create algorithms to aid with tasks that we are faced in everyday life

These skills will be developed through the use of PSHE, IT skills projects and the process of Use, Modify, and Create (UMC) leading to a progression of Predict, Run, Investigate, Modify, and Make (PRIMM)

Develop **knowledge** of...

- Digital citizenship (Internet safety)
- The use of information technology
- Using, Modifying and Creating algorithms for a specific purpose

Through the specific study of:

- Digital citizenship
- Information technology including but not limited to; word processor, excel, PowerPoint, iMovie, book creator and pages
- Block based skills
- HTML
- Java Script

Computing programmes of study:

Key stages 1 and 2

National curriculum in England

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Key stage 1 Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

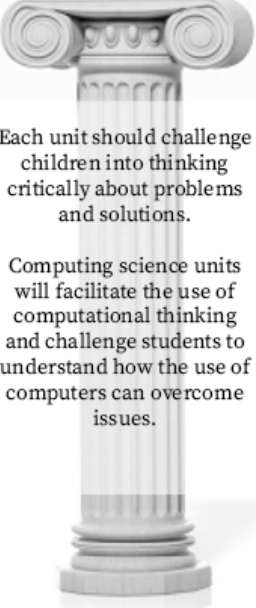
Key stage 2 Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

The 5 pillars of computing:

Within our Computing curriculum, we aim for our computing sessions to support the children in the following areas:

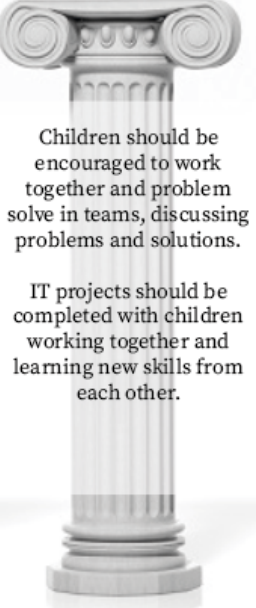
Developing computational thinking



Each unit should challenge children into thinking critically about problems and solutions.

Computing science units will facilitate the use of computational thinking and challenge students to understand how the use of computers can overcome issues.

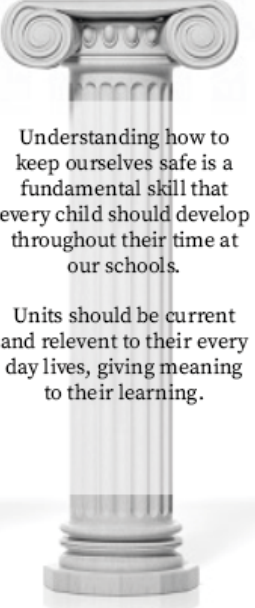
Working collaboratively



Children should be encouraged to work together and problem solve in teams, discussing problems and solutions.

IT projects should be completed with children working together and learning new skills from each other.

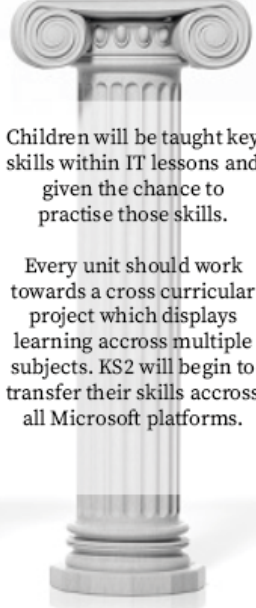
Keeping ourselves safe online



Understanding how to keep ourselves safe is a fundamental skill that every child should develop throughout their time at our schools.

Units should be current and relevant to their every day lives, giving meaning to their learning.

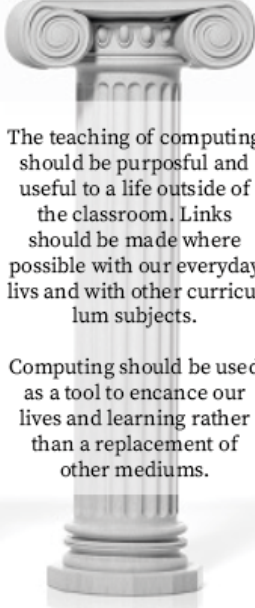
Developing a functional use of IT



Children will be taught key skills within IT lessons and given the chance to practise those skills.

Every unit should work towards a cross curricular project which displays learning across multiple subjects. KS2 will begin to transfer their skills across all Microsoft platforms.

Making links to our daily lives



The teaching of computing should be purposeful and useful to a life outside of the classroom. Links should be made where possible with our everyday lives and with other curriculum subjects.

Computing should be used as a tool to enhance our lives and learning rather than a replacement of other mediums.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 & 2 Year A	Digital Painting Creating Media Effective use of Tools	Pictograms Data & Information Effective use of Tools	Digital Writing Effective use of Tools	Programming animation Design & Development Programming	Technology around us Computing Systems Safety & Security	Robot algorithms Algorithm Design and Development Programming
Year 1 & 2 Year B	Grouping Data Data & Information	Digital Photography Creating Media Effective use of Tools	Making Music Design & Development Effective use of Tools	Moving a robot Algorithm Design and Development Programming	Information technology around us Computing Systems Safety & Security	Programming Quizzes Algorithm Design and Development Programming
Year 3 & 4 Year A	Connecting Computers Computing Systems Safety & Security Networks	Desktop publishing Creating Media Effective use of Tools Design & Development	Sequencing Sounds Algorithms Design & Development Programming	Stop frame animation Creating Media Effective use of Tools Design & Development	Branching Databases Data & Information	Events and actions in programming Algorithm Design and Development
Year 3 & 4 Year B	Repetition in shapes Algorithms Design & Development Programming	The internet Networks Safety & Security	Data logging Computing Systems Data & Information	Repetition in games Algorithms Design & Development Programming	Photo editing Creating Media Effective use of Tools	Audio production Creating Media Effective use of Tools
Year 5 & 6 Year A	Sharing information Networks Safety & Security	Flat File Databases Data & Information	Website creating Creating Media Effective use of Tools	Selection in physical computing Computing Systems Programming	Vector drawing Creating Media Effective use of Tools	Selection in quizzes Algorithms Design & Development Programming
Year 5 & 6 Year B	Introduction in spreadsheets Data & Information	Internet communication Networks Safety & Security	Video production Creating Media Design & Development Effective use of Tools	Variables in games Algorithms Design & Development Programming	3D modelling Effective use of Tools Design & Development	Sensing Algorithms Computing Systems Design & Development Programming

Concept	Key stage 1	Lower Key stage 2	Upper Key stage 2
Computer systems and Networks <i>Understand what a computer is, and how its constituent parts function together as a whole</i> <i>Understand how networks can be used to retrieve and share information, and how they come with associated risks</i>	<p>Recognising technology in school and using it responsibly.</p> <p>Identifying IT and how its responsible use improves our world in school and beyond.</p>	<p>Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks</p> <p>Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.</p>	<p>Recognising IT systems in the world and how some can enable searching on the internet.</p> <p>Exploring how data is transferred by working collaboratively online.</p>
Creating Media Select and create a range of media including text, images, sounds, and video	<p>Choosing appropriate tools in a program to create art, and making comparisons with working non-digittally.</p> <p>Capturing and changing digital photographs for different purposes</p> <p>Using a computer to create and format text, before comparing to writing non-digittally.</p> <p>Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.</p>	<p>Capturing and editing digital still images to produce a stop-frame animation that tells a story.</p> <p>Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</p> <p>Creating documents by modifying text, images, and page layouts for a specified purpose</p> <p>Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled</p>	<p>Planning, capturing, and editing video to produce a short film.</p> <p>Webpage creation Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.</p> <p>Creating images in a drawing program by using layers and groups of objects.</p> <p>Planning, developing, and evaluating 3D computer models of physical objects.</p>

<p>Algorithms and programming</p> <p><i>Be able to comprehend, design, create, and evaluate algorithms</i></p> <p><i>Create software to allow computers to solve problems</i></p>	<p>Writing short algorithms and programs for floor robots, and predicting program outcomes</p> <p>Designing and programming the movement of a character on screen to tell stories.</p> <p>Creating and debugging programs, and using logical reasoning to make predictions.</p> <p>Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p>	<p>Creating sequences in a block-based programming language to make music</p> <p>Using a text-based programming language to explore count-controlled loops when drawing shapes</p> <p>Writing algorithms and programs that use a range of events to trigger sequences of actions.</p> <p>Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</p>	<p>Exploring conditions and selection using a programmable microcontroller.</p> <p>Exploring variables when designing and coding a game.</p> <p>Exploring selection in programming to design and code an interactive quiz</p> <p>Designing and coding a project that captures inputs from a physical device.</p>
<p>Data and information</p> <p><i>Understand how data is stored, organised, and used to represent real-world artefacts and scenarios</i></p>	<p>Exploring object labels, then using them to sort and group objects by properties.</p> <p>Collecting data in tally charts and using attributes to organise and present data on a computer.</p>	<p>Building and using branching databases to group objects using yes/no questions.</p> <p>Recognising how and why data is collected over time, before using data loggers to carry out an investigation.</p>	<p>Using a database to order data and create charts to answer questions.</p> <p>Answering questions by using spreadsheets to organise and calculate data.</p>
<p>Use of tools</p>	<p>Use software tools to support computing work</p>		
<p>Safety and Security</p>	<p>Understand risks when using technology, and how to protect individuals and systems</p>		
<p>Design and development</p>	<p>Understand the activities involved in planning, creating, and evaluating computing artefacts</p>		

Long Term Plan:

CYCLE A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Instructions	Explore hardware	Data handling	E-Safety	Programming	Using a computer
Year 1 / 2	Digital Painting	Pictograms	Digital writing	Programming animations	Technology around us	Robot algorithms
Year 3 / 4	Connecting computers	Desktop publishing	Sequencing sound	Stop frame animation	Branching databases	Events and actions in programming
Year 5 / 6	Sharing information	Flat file databases	Website creating	Selection in physical computing	Vector drawings	Selection in quizzes

CYCLE B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Instructions	Explore hardware	Data handling	E-Safety	Programming	Using a computer
Year 1 / 2	Grouping data	Digital photography	Making music	Moving a robot	Information technology around us	Programming quizzes
Year 3 / 4	Repetition in shapes	The internet	Data logging	Repetition in games	Photo editing	Audio production
Year 5 / 6	Introduction in spreadsheets	Internet communication	Video production	Variables in games	3D modelling	Sensing

Medium Term Planning:

Each e-safety unit will support our MTP (Education for a Connected World)_Planning will be provided along with the MTP. Teachers should adjust each lesson to suit their own children.

IT and computing science units should be planned against the medium term plans which are found in the computing section of the drive [Medium Term Plans - Google Drive](#). Teachers are encouraged to suit each learning objective to the needs of their class. An example MTP is shown below.

Connecting Computers

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Knowledge LO:	LO : To explain how digital devices function	LO: To identify input and output devices	LO: To recognise how digital devices can change the way that we work	LO: To explain how a computer network can be used to share information	LO: To explore how digital devices can be connected	LO: To recognise the physical components of a network
Skills	Explain clearly	Recognise computer components	To recognise how digital devices are used	To understand computer networks	To investigate digital devices	To investigate networks
Pillar focus:	Making links to our daily lives	Making links to our daily lives	Computational thinking	Computational thinking Making links	Computational thinking/ Making links	Computational thinking/making links
Assessment:	ALL I can explain that digital devices accept inputs MOST I can explain that digital devices produce outputs SOME I can follow a process	ALL I can classify input and output devices MOST I can describe a simple process SOME I can design a digital device	ALL I can explain how I use digital devices for different activities MOST I can recognise similarities between using digital devices and using non-digital tools SOME I can suggest differences between using digital devices and using non-digital tools	ALL I can recognise different connections MOST I can explain how messages are passed through multiple connections SOME I can discuss why we need a network switch	ALL I can recognise that a computer network is made up of a number of devices MOST I can demonstrate how information can be passed between devices SOME I can explain the role of a switch, server, and wireless access point in a network	ALL I can identify how devices in a network are connected together MOST I can identify networked devices around me SOME I can identify the benefits of computer networks

Computing Skills in Early Years

Pre-School	<ul style="list-style-type: none">● Seeks to acquire basic skills in turning on and operating some digital equipment● Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car● Plays with water to investigate “low technology” such as washing and cleaning● Uses pipes, funnels and other tools to carry/transport water from one place to another
Nursery	<ul style="list-style-type: none">● Knows how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support● Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets● Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images● Knows that information can be retrieved from digital devices and the internet● Plays with a range of materials to learn cause and effect, for example, makes a string puppet using dowels and string to suspend the puppet
Reception	<ul style="list-style-type: none">● Completes a simple program on electronic devices● Uses ICT hardware to interact with age-appropriate computer software● Can create content such as a video recording, stories, and/or draw a picture on screen● Develops digital literacy skills by being able to access, understand and interact with a range of technologies● Can use the internet with adult supervision to find and retrieve information of interest to them

Resources we use – IWB, Barefoot computing, Tablets, cause and effect toys and books, role play phones, tills, cameras.

Vocabulary progression

Year 1	Computing systems and networks – Technology around us	Creating Media – Digital painting	Programming A – Moving a robot	Data and Information- Grouping data	Creating Media – Digital writing	Programming B Programming animation
	Technology, Man-made, Digital, Screen, Mouse, Keyboard, Program, Click/Drag, Cursor, E-safety	Paint Program, Tool, Paintbrush, Erase, Fill, Undo, Click, Drag, Save, Icon	Programmed, Robot, Algorithm, Button, Direction, Forwards, Backwards, Left, Right, Route	Information, Data, Search, Label, Group, Describe, Program, Properties, Similar, Different	Word Processor, Text, Font, Keyboard, Text Cursor, Enter, Spacebar, Toolbar, Font, Icon	Programming, Scratch Jr, Sprite, Home, Command, Block, Stage, Background, Algorithm, App

Year 2	Computer systems and networks – IT around us	Creating Media – Digital photography	Programming A – Robot algorithms	Data and information - Pictograms	Creating media – Digital music	Programming B Programming quizzes
	Information Technology, Computer, Device, Barcode, Scanner, Communication, Entertainment, Appliances, Signal, E-safety	Photography, Editing, Software, Digital, Portrait, Landscape, Scene, Subject, Lighting, Colour	Program, Robot, Algorithm, Direction, Route, Obstacle, Design, Error, Chucking, Debugging	Information, Data, Pictogram, Group, Tally, Tally Chart, Properties, Present, Problem	Music, Emotions, Pulse, Rhythm, Patterns, Pitch, Tempo, Instrument, Sound, Note	Programming, Scratch Jr, Sprite, Quiz, Command, Block, Debugging, Sequence, Algorithm, Outcome

Year 3	Computer systems and networks –	Creating media – Stop-Frame animation	Programming A – Sequencing Sounds	Data and information –	Creating Media – Desktop publishing	Programming B – Events and actions
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	Connecting Computers			Branching Databases		
	Digital Device, Input, Process, Output, Connection, Network, Network Switch, Server, WAP, E-Safety	Animation, Frame, Illusion, Sequence, Onion Skinning, Playback, Storyboard, Audio, Consistency, Text	Programming, Scratch, Blocks, Commands, Code, Sprite, Stage, Costume, Backdrop, Debugging	Information, Data, Attributes, Group, Branching, Database, Multiple, Classify, Structure, Present	Publishing, Text, Images, Font, Templates, Orientation, Placeholders, Software, Purpose, Audience	Programming, Scratch, Blocks, Commands, Code, Events, Motion, Sequence, Trialling, Debugging

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Year 4	Computer systems and networks – The internet	Creating Media – Audio production	Programming A – Repetition in Shape	Data and Information – Data Logging	Creating Media – Photo editing	Programming B – Repetition in games
	Network, Internet, World Wide Web, Router, Security, Website, Webpage, Browser, Domain, Reliable	Audio, Input, Output, Microphone, Speaker, Podcast, Waveform, Jingle, Track, Presenter	Programming, Logo, Turtle, Commands, Code, Cursor, Algorithm, Pattern, Sequence, Debugging	Information, Data, Collection, Sensor, Logging, Analysis, Data Logger, Software, Interpret, Conclusion	Photography, Editing, Software, Crop, Rotate/Flip, Copy, Brightness, Contrast, Enlarge, Reduce	Programming, Scratch, Blocks, Commands, Code, Events, Motion, Sequence, Trailing, Debugging

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Year 5	Computer systems and networks –	Creating Media – Video production	Programming A – Selection in	Data and information –	Creating media – Introduction to vector graphics	Programming B – Selection in quizzes
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	Systems and searching		physical computing	Flat-file databases		
	System, Input, Process, Output, Protocol, IP address, Packet, Reuse, Explore, Collaboration	Video, Audio, Themes, Message, Dialogue, Plot, Props, Zoom, Angle, Pan/Tilt	Programming, Circuit, Electricity, Microcontroller, Code, LED, Algorithm, Motor, Sequence, Debugging	Information, Data collection, Data base, Search, Sort, Filter, Software, Fields, Records	Vector, Object, Handles, Rotate, Enlarge/Reduce, layering, Gradient, Zoom, Alignment, Grouping	Programming, Scratch, Logical, Commands Algorithm, Condition, Selection, Sequence, Trialling, Debugging
Year 6	Computer systems and networks – Communication and collaboration	Creating media – Webpage creation	Programming A – Variables in games	Data and Information - Spreadsheets	Creating media – 3D Modelling	Programming B – Sensing movement.
	Internet, World Wide Web, Search engine, Browser, Keyboard, Google, Tim Berners-Lee, Ranking, Crawlers, Algorithm	Web page, Website, domain, Hypertext, Purpose/Audience, Browser, Copyright, Homepage, Navigation pathways	Programme, Variable, Scratch, Events, Code, LED, Algorithm, Motor, Modify, Debugging	Information, Data, Spreadsheet, Format, formula, Accounting, Filter, Software, Tax, Business	Modelling, 3 Dimension, Workspace, Faces, Vertices, Edges, Handles, duplicate, Holes.	Programming, Microbit, LED, Sensor, Random, Condition, Accelerometer, Sequence, Emulator, Motion

Assessing Computing

Computing skills should be assessed against the computing assessment documents found in

the computing section of the drive. Clear guidance of how to assess children is given and should be followed by staff in order to accurately track children throughout their journey at Westwood and Grove.

An example of the assessment sheets are below.

Term	Unit	Just At	At	Above
Autumn 1	Digital Painting	To create a picture using a free hand tool. To use the undo button to correct a mistake To use a range of paint colours	To select tools to achieve required outcomes and begin to consider the impact of the choices made. Edit and make improvements to your work with support changing colour, line and fill.	To combine a range of tools to create a piece of artwork and consider the impact of the choices made. Independently evaluate, review and make changes to their work and justify their choices.
Autumn 2	Pictograms	Use a tally chart to collect data Can enter data onto a computer Recognise that people, animals and objects can be described by attributes Can use a pictogram to answer single-attribute questions	Compare objects that have been grouped by attribute Use pictograms to answer comparison questions Use a computer to present information in different ways	To construct a given comparison question Give examples of why some information should not be shared with other people
Spring 1	Digital Writing	Recognise a keyboard is used to enter text into a computer Use letters, number and space keys Use punctuation Select text	Use the shift key to change characters and use special characters in writing Change the size and font of text Use the undo and backspace button to correct errors	Change the appearance of text on a computer Consider the impact of choices made when typing onto a computer

What is a Computer? Key Skills

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> - Use different digital devices. - Recognise that you can access content on a digital device. - Use a mouse, touchscreen or appropriate access device to target and select 	<ul style="list-style-type: none"> - Recognise a range of digital devices. - Select a digital device to fulfil a specific task, e.g. to take a photo. - Name a range of digital devices, e.g. laptop, phone, games console. - Log on to the school 	<ul style="list-style-type: none"> - Recognise what a computer is (input > process > output). - Recognise that a range of digital devices contain computers, e.g. phone, games console, smart speaker. - Explain what the basic 	<ul style="list-style-type: none"> - Describe what a computer is (input > process > output). - Explain the difference between input and output devices on a computer. - Know where to save and open files (e.g. in shared folder). 	<ul style="list-style-type: none"> - Recognise that you can organise files using folders. - Explain what a good file name would look like. - Delete and move files. - Use key parts of a keyboard effectively, e.g. shift, arrow keys, delete). 	<ul style="list-style-type: none"> - Type using fingers on both hands. - Use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). - Explain what makes a strong password. - Use folders to organise files. 	<ul style="list-style-type: none"> - Type efficiently using both hands. - Use a range of keyboard shortcuts. - Recognise that different devices may have different operating systems. - Organise files effectively using folders and files

Digital Literacy

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> - Are aware that some online content is inappropriate. - Are aware that information can be public or private. - Know to tell an appropriate adult if they see something on the computer that upsets them. 	<ul style="list-style-type: none"> - Use a simple password when logging on, where relevant. - Explain why we use passwords. - Recognise examples of personal information e.g. name, image. - Know who to tell if concerned about content or contact online. - Recognise that digital content belongs to the person who created it. - Talk about their use of technology at home. 	<ul style="list-style-type: none"> - Remember a simple password to log onto the computer or a website. - Identify rules for acceptable use of technology in school. - Recognise what personal information is and the need to keep it private. - Recognise that spending a lot of time in front of a screen can be unhealthy. - Recognise that some information found online may not be true. 	<ul style="list-style-type: none"> - Explain why we need to keep our password safe. - Recognise that digital content belongs to the person who first created it, but we can give permission for others to use it. - Recognise when to share personal information and when not to. - Recognise that some people lie about who they are online. - Are aware that games and films have age ratings. 	<ul style="list-style-type: none"> - Remember and use an individual password. - Recognise what kinds of websites are trustworthy sources of information. - Recognise the benefits and risks of different apps and websites. - Recognise that the media can portray groups of people differently. - Can rate a game or film they have made and explain their rating. 	<ul style="list-style-type: none"> - Know where to find copyright free images and audio, and why this is important. - Critically evaluate websites for reliability of information and authenticity. - Demonstrate responsible use of a online services, and know a range of ways to report concerns. 	<ul style="list-style-type: none"> - Explain what makes a strong password and why this is important at school and in the wider world. - Explain how algorithms are used to track online activities with a view to targeting advertising and information. - Know that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling.

Presenting Information & Multimedia

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> - Use technology to explore and access digital content. - Operate a digital device with support to fulfil a task. - Create simple digital 	<ul style="list-style-type: none"> - Create digital content, e.g. digital art. - Choose media from a selection (e.g. images, video, sound) to present information on a topic. - Recognise that you can 	<ul style="list-style-type: none"> - Create simple digital content for a purpose, e.g. digital art. - Recognise that we can use technology to record and playback audio or take and 	<ul style="list-style-type: none"> - Present ideas and information by combining media independently, e.g. text and images. - Design and create simple digital content for a 	<ul style="list-style-type: none"> - Collect, organise and present information using a range of media. - Design and create digital content for a specific purpose, e.g. poster, animation. 	<ul style="list-style-type: none"> - Identify and use appropriate hardware and software to fulfil a specific task. - Remix and edit a range of existing and their own media to create content. 	<ul style="list-style-type: none"> - Select, combine and remix a range of media to create original content. - Consider all steps of the design process when creating content (e.g. identify problem, plan,

Data						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> - Access content in a range of formats, e.g. image, video, audio. - Answer basic questions about information displayed in images e.g. more or less. 	<ul style="list-style-type: none"> - Recognise different forms of digital content, i.e. text, image, video and audio. - Collect simple data (e.g. likes/dislikes) on a topic. - Present simple data using images, e.g. number of animals. - Recognise charts and pictograms and why we use them. - Explain information shown in a simple chart or pictogram. - Modify simple charts/pictograms, e.g. add title, item or labels. - Identify the key features of a chart or pictogram. - Collect data on a topic (eye colour, pets etc.) and present in a pictogram or chart. 	<ul style="list-style-type: none"> - Identify different forms of digital content, i.e. text, image, video and audio. - Recognise charts, pictograms and branching databases, and why we use them. - Identify an object using a branching database - Recognise an error in a branching database. - Create a branching database using pre-prepared images and questions - Identify the features of a good question in a branching database. - Independently plan out and create a branching database. - Evaluate a given branching database and suggest improvements. 	<ul style="list-style-type: none"> - Recognise charts, pictograms and databases, and why we use them. - Present information using a suitable chart - Explore a record card database to find out information. - Use filters in a database to find out specific information. - Name the key parts of a database, e.g. record, field, search. - Answer questions about information in a database. - Name some benefits of using a computer to create charts and databases. - Recognise that search engines store information in databases. 	<ul style="list-style-type: none"> - Draw conclusions from information stored in a database, chart or table. - Design a questionnaire and collect a range of data on a theme. - Choose appropriate formats to present data to convey information. - Recognise that school computers are connected together on a network. - Recognise that the Internet is made up of computers and other digital devices connected together all around the world. - Know that you use a web browser to access information stored on the internet. - Appreciate that you need to use specific software to work with video, images, audio etc. 	<ul style="list-style-type: none"> - Explain the difference between data and information. - Appreciate that different programs work with different types of data, e.g. text, number, video. - Explain the difference between the Internet and the World Wide Web. - Know the difference between a search engine and a web browser. - Explain the basics of how search engines work, and that different search engines may give different results. - Perform complex searches for information using advanced settings in search engines. - Recognise the benefits and risks of sharing data online. 	<ul style="list-style-type: none"> - Recognise what a spreadsheet is and what it is used for. - Explain the difference between physical, mobile and wireless networks. - Use simple formulae in a spreadsheet to find out information from a set of data. - Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. - Produce graphs from data in a spreadsheet to answer a question. - Analyse and evaluate data and information in a spreadsheet, chart or database. - Recognise that poor quality data leads to unreliable results.

Programming & Algorithms						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> - Explore technology. - Repeat an action with technology to trigger a specific outcome. - Recognise the success or failure of an action. - Follow simple 	<ul style="list-style-type: none"> - Recognise that computers don't have a brain. - Explain that we control computers by giving them instructions. - Create a simple program 	<ul style="list-style-type: none"> - Explain that computers have no intelligence and we have to program them to do things. - Create a program with multiple steps e.g. to control a floor robot. 	<ul style="list-style-type: none"> - Predict the outcome of a block or text based program (Scratch/Logo). - Successfully modify an existing program, e.g. change background, number of times things 	<ul style="list-style-type: none"> - Create a program using a range of events/inputs to control what happens. - Recognise that we can decompose a problem into smaller parts to help 	<ul style="list-style-type: none"> - Name a range of sensors in physical systems. - Recognise that different solutions may exist for the same problem. - Predict what will happen 	<ul style="list-style-type: none"> - Design and program a physical computing system that uses sensors. - Recognise and use procedures (sub-routines) in programs. - Plan out a program in

NON – NEGOTIABLES:

- Each class will have an hour computing lesson each week.
- Every class to have a focus on the awareness of E-safety at the beginning of each academic year with reminders at the start of each term and lessons when necessary.
- When taking photographs during lessons, staff should be aware of E-safety when loading photos onto the website and social media.
- Any concerns for pupil's safety on technology both in and outside of school must be reported to the Designated Safeguarding Lead (DSL).
- A broad range of computing skills to be taught throughout the year whilst incorporating the use of technology in other subjects.
- Half Termly assessment to be carried out on the assessment grid and recorded on target tracker.

- Keep evidence of the computing learning in the class book and regularly send examples of work to the Computing Lead so they can update computing displays.
- Equipment to be looked after appropriately. ALL equipment MUST go back on charge after each session. Notify the appropriate member of staff if any equipment is not working or needs replacing.
- Each year group are responsible for uploading examples of children's progressive work on the school website. This should be done at least fortnightly.

Resources:/Useful Websites.

<https://code.org/>

<https://codeit.co.uk/>

<https://www.terrapinlogo.com/emu/beebot.html>

<https://blockly.games/maze>

<https://hourofcode.com/uk>

<https://bitsbox.com/> - Children can make their own apps

<https://www.icompute-uk.com/Downloads/iCompute-HOC-iMake-Algorithms.pdf>

<https://www.barefootcomputing.org/> - Excellent site to develop teacher knowledge as well as activity and lesson ideas for children.