The Ribblesdale Federation of Schools

Curriculum Handbook B

(Updated for 2023 -2024 Curriculum)

Long Term Plan – Cycles of Units of Study

EYFS – Computing
Practitioners will; • Provide opportunities to use technology to solve problems. • Provide opportunities for pupils to use technology to produce creative outcomes. • Provide opportunities to take part in a variety of tasks with digital devices such as Bee Bots. • Provide opportunities to use toys such as remote control cars, walkie talkies and interactive pets. • Provide opportunities to use digital cameras, voice recorders or microphones and iPads.

Year 1 Computing – Long Term Overview

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
2023-2024 (A)	Computing systems and networks Improving Mouse Skills Yr 1 5 Lessons	Programming 1 Algorithms Unplugged (Yr 1)	Skills Show case Rocket to the moon Yr 1 (5 lessons)	Programming 2 Programming Bee Bots	Online Safety Online Safety Yr 1 (4 Lessons)	Data Handling Introduction to data (Yr 1)

Year 2 and 3 Computing – Long Term Overview Kapow

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Yr A	Computing systems and networks 1 What is a computer? (yr2)	Computing systems and networks 1 Networks (yr 3)	Data Handling International Space Station (Yr 2)	Programming Scratch Jr (Yr 2)	Creating media Stop Motion Using Tablets (Yr2)	Online Safety Online safety (Yr 2)
Yr B	(Yr 2) Online Safety Online safety (Yr 3)	Computing systems and networks 2 Word Processing	Creating Media Video trailers Option 1: Using devices other than iPads , Option 2: Using iPads (Yr 3)	Computing systems and networks 3 Journey inside a computer (Yr 3)	Programming 1 Algorithms and debugging (Yr 2	Data Handling Comparison cards databases Option 1: Google Option 2: Microsoft Office 365

Years 4, 5 and 6 Computing – Long Term Overview Kapow						
	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
2023-2024 Cycle A	Computing systems and networks Collaborative Learning Option 1: Google Option 2: Microsoft Office 365 (Yr 4)	Programming 1 Programming music Option 1: Sonic Pi , Option 2: Scratch (Yr 5)	Computing systems and networks Search Engines (Yr 5)	Data handling Investigating Weather (Yr 4)	Skills showcase Inventing a Product (Yr 6)	Online Safety Online Safety (Yr 4)
2024-2025 Cycle B	Online safety Online safety Y5 (Yr 5)	Data handling Mars Rover 1 (Yr 5)	Creating Media Website design Option 1: Google Option 2: Microsoft Office 365 (Yr 4)	Programming 1 Further coding with Scratch Option 1: Google Option 2: Microsoft Office 365 (Yr 4)	Programming Intro to python (Yr 6)	Data Handlig Big Data 1 (Yr 6)
2025 – 2026 Cycle C	Programming 2 Micro:Bit (yr 5)	Skills Showcase Mars Rover 2 (Yr 5)	Programming 2 Computational thinking (Yr 4)	Computer Networks and Systems Bletchley Park (Yr 6)	Creating media Stop motion animation Option 1: Stop motion studio Option 2: Using cameras (Yr 5)	Online safety Online safety Y6 (Yr 6)

Computing

Intent

All pupils have the right to have rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use 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. In Computing lessons, pupils are introduced to a wide range of technology, including laptops, iPads and interactive whiteboards, allowing them to continually practice and improve the skills they learn. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology– at a level suitable for the future workplace and as active participants in a digital world.
We teach a curriculum that enables children to become effective users of technology who can:

- Understand and apply the essential principles and concepts of Computer Science, including logic, algorithms and data representation;
- Analyse problems in computational term, and have repeated practical experience of writing computer programs in order to solve such problems;
- Evaluate and apply information technology analytically to solve problems;
- Communicate ideas well by utilising appliances and devices throughout all areas of the curriculum.

Internet Safety

We take internet safety extremely seriously. We have an E- Safety Policy that provides guidance for teachers and children about how to use the internet safely. Every year group participates in lessons on e-safety and children understand how to stay safe when using technology

Pupils with SEND

To support pupils with SEND to access a full computing curriculum, we use a range of approaches which include, but are not limited to: pre-teaching subject-specific vocabulary, including vocabulary relating to the passing of time; use of visual aids and artefacts which can be explored practically; scaffolding resources, such as writing frames; additional thinking time; additional adult support; use of technology; multi-sensory activities and multimedia teaching; alternative means to record responses; task breakdown plans; use of vocabulary mats, and; targeted questioning

EYFS

This subject leader handbook is for the national curriculum. There is a separate EYFS handbook which shows the EYFS long-term curriculum. The EYFS curriculum is holistic and therefore a number of areas of learning will link to this subject and support children to be immersed in Computing

Implementation

Implementation:

To ensure high standards of teaching and learning in computing, we implement a curriculum that is progressive throughout the whole school. Our implementation of the computing curriculum is in line with 2014 Primary National Curriculum requirements for KS1 and KS2 and the Foundation Stage Curriculum in England. This provides a broad framework and outlines the knowledge and skills taught in each key stage.

We use and follow the Kapow scheme of work from Year 1-6, ensuring consistency and progression throughout the school. The scheme of work enables clear coverage of the computing curriculum whilst also providing support and CPD for less confident teachers to deliver lessons.

The lessons are broken down into weekly units, usually with two units taught per half term. Units are practical and engaging and allow computing lessons to be hands on. Units cover a broad range of computing components such as coding, spreadsheets, Internet and Email, Databases, Communication networks, touch typing, animation and online safety.

When teaching computing teachers can follow the children's interests to ensure their learning is engaging, broad and balanced. Teachers ensure that computing capability is also achieved through core and foundation subjects and where appropriate and necessary computing should be incorporated into work for all subjects where possible.

Computing teaching is practical and engaging and a variety of teaching approaches and activities are provided based on teacher judgement and pupil ability. Teachers and pupils are aware of the importance of health and safety and pupils are always supervised when using technology and accessing the internet.

We provide a variety of opportunities for computing learning inside and outside the classroom. Computing and safeguarding go hand in hand and we provide a huge focus on internet safety inside and outside of the classroom. Additional to all pupils studying an online safety unit through their computing lessons, every year we also take part in National Safer Internet Day in February. The Computing subject leader, alongside class teachers, will plan additional internet safety lessons and activities.

Impact

Our Computing curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes
- Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- Children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
- Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
- Children are responsible, competent, confident and creative users of information and communication technology.
- A celebration of learning for each term which demonstrates progression across the school;

Tracking of gains in each quiz;

- Pupil discussions about their learning;

National Curriculum

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.

Year A – Computing systems and networks
Improving Mouse Skills
Yr 1

	In Year 1 we…
	Skills Learning how to explore and tinker with hardware to find out how it works. Learning where keys are located on the keyboard. Using a basic range of tools within graphic editing software. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Recognising devices that are connected to the internet. Logging in and out and saving work on their own account. Knowledge Log in and log out means to begin and end a connection with a computer A computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. Passwords are important for security and to keep us safe.
Suggested enrichment ideas	

Year A – Programming 1
Algorithms Unplugged
(Yr 1)

	In Year 1 we…
	Skills Recognising that some devices are input devices and others are output devices. Learning that decomposition means breaking a problem down into smaller parts. Using decomposition to solve unplugged challenges. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Learning to debug instructions when things go wrong. Learning to debug an algorithm in an unplugged scenario. Knowledge An algorithm is when instructions are put in an exact order. Decomposition means breaking a problem into manageable chunks and that is important in computing. We call errors in an algorithm are called bugs and fixing these is called debugging.
Suggested enrichment ideas	

Year A – Skills Show case
Rocket to the moon
Yr 1
(5 lessons)

	In Year 1 we…
	<u>Skills</u> Learning where keys are located on the keyboard. Learning how to operate a camera to take photos and videos. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Learning to debug instructions when things go wrong. Learning to debug an algorithm in an unplugged scenario. <u>Knowledge</u> To know that when we create something on a computer it can be more easily saved and shared than a paper version. To know some of the simple graphic design features of a piece of online software. To know that a spreadsheet is an electronic ‘table’ for sorting data.
Suggested enrichment ideas	

Year A – Programming 2
Programming Bee Bots Yr 1

	In Year 1 we…
	<u>Skills</u> Learning how to explore and tinker with hardware to find out how it works. Learning how to operate a camera to take photos and videos. Using decomposition to solve unplugged challenges. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm. Programming a floor robot to follow a planned route. <u>Knowledge</u> The basic functions of a Bee-Bot. You can use a camera/tablet to make simple videos. Algorithms move a Bee-Bot accurately to a chosen destination.
Suggested enrichment ideas	

Year A – Online Safety
Online Safety Yr 1
(4 Lessons)

	In Year 1 we…
	Skills Recognising devices that are connected to the internet. Understanding that we are connected to others when using the internet. Understanding some of the ways we can use the internet. When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable. Understanding how to interact safely with others online. Recognising how actions on the internet can affect others. Recognising what a digital footprint is and how to be careful about posting online. Discussing ways to balance time spent online and offline. **Knowledge** To know that the internet is many devices connected to one another. To know what to do if you feel unsafe or worried online – tell a trusted adult. To know that people you do not know on the internet (online) are strangers and are not always who they say they are. To know that to stay safe online it is important to keep personal information safe. To know that 'sharing' online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet.
Suggested enrichment ideas	

Year B – Data Handling
Introduction to data
(Yr 1)

	In Year 1 we…
	Skills Learning how to explore and tinker with hardware to find out how it works. Recognising that some devices are input devices and others are output devices. Learning where keys are located on the keyboard. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools. Recognising devices that are connected to the internet. Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. Using data representations to answer questions about data. Knowledge To know that charts and pictograms can be created using a computer. To understand that a branching database is a way of classifying a group of objects. To know that computers understand different types of 'input'.
Suggested enrichment ideas	

Year B – Computing systems and networks 2
Word Processing
(Yr 2)

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In Year 2 we…	In Year 3 we...
Skills Developing confidence with the keyboard and the basics of touch typing. Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. Using word processing software to type and reformat text. Searching for appropriate images to use in a document. Understanding what online information is. Identifying whether information is safe or unsafe to be shared online. **Key knowledge** To know that touch typing is the fastest way to type. To know that I can make text a different style, size and colour. To know that “copy and paste” is a quick way of duplicating text. .	**Skills** Developing confidence with the keyboard and the basics of touch typing. Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. Using word processing software to type and reformat text. Searching for appropriate images to use in a document. Understanding what online information is. Identifying whether information is safe or unsafe to be shared online. Format different texts including colour, size and format **Key knowledge** To know that touch typing is the fastest way to type. To know that I can make text a different style, size and colour. To know that “copy and paste” is a quick way of duplicating text. To know about formatting different types of texts To use keys and shortcuts effectively
Suggested enrichment ideas	

Year B – Creating Media
Video trailers Option 1: Using devices other than iPads , Option 2: Using iPads (Yr 3)

In Year 2 we…	In Year 3 we...
Key Skills Using software, testing and explaining what it does. Taking photographs and recording video to tell a story. Using software to edit and enhance their video **Key knowledge** To know that different types of camera shots can make my photos or videos look more effective. To know that I can edit photos and videos using film editing software.	**Key skills** Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Taking photographs and recording video to tell a story. Using software to edit and enhance their video adding music, sounds and text on screen with transitions. **Key knowledge** To know that different types of camera shots can make my photos or videos look more effective. To know that I can edit photos and videos using film editing software. To understand that I can add transitions and text to my video.

Year B – Computing systems and networks 3

Journey inside a computer.

(Yr 3)

In Year 2 we…	In Year 3 we...
Key skills Understanding what the different components of a computer do and how they work together. Drawing comparisons across different types of computers. Explain the parts of a laptop computer. **Key knowledge** To know the roles that inputs and outputs play on computers. To know what some of the different components inside a computer are. To know what a tablet is and how it is different from a laptop/desktop computer.	**Key skills** Understanding what the different components of a computer do and how they work together. Drawing comparisons across different types of computers. Using decomposition to explain the parts of a laptop computer. Explaining the purpose of an algorithm **Key knowledge** To know the roles that inputs and outputs play on computers. To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together. To know what a tablet is and how it is different from a laptop/desktop computer.

Year B – Programming 1 Algorithms and Debugging (Yr2)

In Year 2 we…	In Year 3 we...
Key Skills Developing confidence with the keyboard and the basics of touch typing. Articulating what decomposition is. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that programs execute by following precise instructions. **Key knowledge** **To know:** To understand what machine learning is and how it enables computers to make predictions. To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times. To know that abstraction is the removing of unnecessary detail to help solve a problem.	**Key skills** Developing confidence with the keyboard and the basics of touch typing. Articulating what decomposition is. Decomposing a game to predict the algorithms used to create it. Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that programs execute by following precise instructions. **Key knowledge** **To know:** To understand what machine learning is and how it enables computers to make predictions. To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times. To know that abstraction is the removing of unnecessary detail to help solve a problem.

Year B –Data Handling Comparison Cards databases Microsoft Office

In Year 2 we…	In Year 3 we...
Key Skills Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Understanding the vocabulary associated with databases: field, record, data. Learning about the pros and cons of digital versus paper databases. Sorting and filtering databases to easily retrieve information. **Key knowledge** To know that a database is a collection of data stored in a logical, structured and orderly manner. To know that computer databases can be useful for sorting and filtering data. .	**Key Skills** Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Understanding the vocabulary associated with databases: field, record, data. Learning about the pros and cons of digital versus paper databases. Sorting and filtering databases to easily retrieve information. Creating and interpreting charts and graphs to understand data **Key knowledge** To know that a database is a collection of data stored in a logical, structured and orderly manner. To know that computer databases can be useful for sorting and filtering data. To know that different visual representations of data can be made on a computer.

Year B – Online Safety (Yr 3)

In Year 2 we…	In Year 3 we...
K**ey Skills** Recognising how social media platforms are used to interact. Recognising that different information is shared online, including facts, beliefs and opinions. Learning how to identify reliable information when searching online. Learning how to stay safe on social media. Considering the impact technology can have on mood. **Key knowledge** That not everything on the internet is true: people share facts, beliefs and opinions online. The internet can affect people's moods and feelings. Privacy settings limit who can access important personal information, such as names, ages, gender etc. What social media is and that age restrictions apply	**Key Skills** Recognising how social media platforms are used to interact. Recognising that different information is shared online, including facts, beliefs and opinions. Learning how to identify reliable information when searching online. Learning how to stay safe on social media. Considering the impact technology can have on mood. **Key knowledge** That not everything on the internet is true: people share facts, beliefs and opinions online. The internet can affect people's moods and feelings. Privacy settings limit who can access important personal information, such as names, ages, gender etc. What social media is and that age restrictions apply.

Year B – Data handling – Mars Rover 1

In Year 4 we…	In Year 5 and 6 we...
Key skills Learning that a separate computer can program external devices. Recognising how the size of RAM affects the processing of data. Learning the vocabulary associated with data: data and transmit. Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations. Understanding how data might be used to tell us about a location. **Key knowledge** Mars Rover is a motor vehicle that collects data from space by taking photos and examining rock samples. What numbers using binary code look like and be able to identify how messages can be sent in this format. RAM is Random Access Memory and acts as the computer's working memory. What simple operations can be used to calculate bit patterns.	**Key skills** Learning that a separate computer can program external devices. Recognising how the size of RAM affects the processing of data. Learning the vocabulary associated with data: data and transmit. Recognising that computers transfer data in binary and understanding simple binary addition. Relating binary signals (Boolean) to the simple character-based language, ASCII. Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations. Understanding how data is collected in remote or dangerous places. Understanding how data might be used to tell us about a location. **Key knowledge** Mars Rover is a motor vehicle that collects data from space by taking photos and examining rock samples. What numbers using binary code look like and be able to identify how messages can be sent in this format. RAM is Random Access Memory and acts as the computer's working memory. What simple operations can be used to calculate bit patterns.

Year B – Creating Media
Website design Option 1: Google Option 2
(Yr 4)

In Year 4 we…	In Year 5 and 6 we...
Key skills Building a web page and creating content for it. Designing and creating a webpage for a given purpose. Using software to work collaboratively with others. **Key knowledge** To know that a website is a collection of pages that are all connected. To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks. To know that websites should be informative and interactive	**Key skills** Building a web page and creating content for it. Designing and creating a webpage for a given purpose. Using software to work collaboratively with others. **Key knowledge** To know that a website is a collection of pages that are all connected. To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks. To know that websites should be informative and interactive

Year B – Programming – Introduction to python (yr 6)

In Year 4 we…	In Year 5 and 6 we...
Key skills Decomposing a program into an algorithm. Writing algorithms for a purpose. Debugging to make a program more efficient. Remixing existing code to explore a problem.. Programming using the language Python. Changing a program to personalise it. Evaluating code to understand its purpose. **Key knowledge** To know that there are text-based programming languages such as Logo and Python. .	**Key skills** Decomposing a program into an algorithm. Writing increasingly complex algorithms for a purpose. Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Using and adapting nested loops. Programming using the language Python. Changing a program to personalise it. Evaluating code to understand its purpose. **Key knowledge** To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbers and remix Python code**.** .

Year B - Programming 1

Further coding with Scratch Option 1: Google Option 2: Microsoft Office 365 (Yr 4)

In Year 4 we…	In Year 5 and 6 we...
Key skills Using decomposition to solve a problem by finding out what code was used. Using decomposition to understand the purpose of a script of code. Creating algorithms for a specific purpose. Coding a simple game. Incorporating variables to make code more efficient. Remixing existing code. **Key knowledge** That a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. What a conditional statement is in programming. That using variables can help you to create a quiz on Scratch.	**Key skills** Using decomposition to solve a problem by finding out what code was used. Using decomposition to understand the purpose of a script of code. Creating algorithms for a specific purpose. Coding a simple game. Incorporating variables to make code more efficient. Remixing existing code. **Key knowledge** That a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. What a conditional statement is in programming. That using variables can help you to create a quiz on Scratch

Year B – Data Handling – Big Data 1 (Yr 6)

In Year 4 we…	In Year 5 and 6 we...
Key skills Understanding and identifying barcodes, QR codes. Identifying devices and applications that can scan or read barcodes, QR Understanding how barcodes, QR codes work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets. Learning how ’big data’ can be used to solve a problem or improve efficiency **Key knowledge** Data contained within barcodes and QR codes can be used by computers. Data is often encrypted so that even if it is stolen it is not useful to the thief.	**Key skills** Understanding and identifying barcodes, QR codes and RFID. Identifying devices and applications that can scan or read barcodes, QR codes and RFID. Understanding how barcodes, QR codes and RFID work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets. Learning how ’big data’ can be used to solve a problem or improve efficiency **Key knowledge** Data contained within barcodes and QR codes can be used by computers. Infrared waves are a way of transmitting data. Radio Frequency Identification (RFID) is a more private way of transmitting data. Data is often encrypted so that even if it is stolen it is not useful to the thief.

Year A – Online Safety
Online Safety
(Yr 5)

In Year 4 we…	In Year 5 and 6 we...
Key skills Understand that passwords need to be strong and that apps require some form of password. Recognise some types of online communication and know who to go to if they need help with any communication matters online. Know what bullying is and that it can occur both online and in the real world. Recognise when health and well-being are being affected in either a positive or negative way through online use. Offer some advice and tips to combat the negative effects of online use. **Key knowledge** **To know:** Possible dangers online and how to stay safe. The pros and cons of online communication. That information on the internet might not be true or correct and ways of checking validity. What to do if they experience bullying online. How to use an online community safely**.**	**Key skills** Understand that passwords need to be strong and that apps require some form of password. Recognise some types of online communication and know who to go to if they need help with any communication matters online. Search for simple information about a person, such as their birthday or key life moments. Know what bullying is and that it can occur both online and in the real world. Recognise when health and well-being are being affected in either a positive or negative way through online use. Offer some advice and tips to combat the negative effects of online use. **Key knowledge** **To know:** Possible dangers online and how to stay safe. The pros and cons of online communication. That information on the internet might not be true or correct and ways of checking validity. What to do if they experience bullying online. How to use an online community safely.

Agreed End Points

We have plotted end points for each year group to ensure that children keep on track for the end of Key Stage end points. In this way we can get children ready for the next stage of their education

Our end points ensure that our curriculum is purposefully structured and logically sequenced, and new knowledge builds on previous knowledge – links can be made across different areas of study.

Computing	Year One	Year Two
Texta and Multimedia	• Work with others and with support to contribute to a digital class resource which includes text, graphic and sound. •	• Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.
Digital Images	• Use a range of simple tools in a paint package / image manipulation software to create / modify a picture.	• Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. • Create a simple animation to tell a story. •
Sound and Music	• Chose suitable sounds from a bank to express their ideas. • Record short speech. •	• Compose music from icons. • Produce a simple presentation incorporating sounds the children have captured, or created.
Electronic Communication	• Contribute ideas to a class email to another class / school etc. •	• Work collaboratively by email to share and request information of another class or story character.
Research and ESafety	• As a class exercise children explore information from a variety of sources (electronic, paper based, observations of the world around them, etc.). **PSHE Links** **H12 – To know rues for keeping physically and emotionally safe including responsible ICT use and online safety.** **H16 – To know what is meant by 'privacy' their right to keep things private, the importance of respecting others' privacy.** **R13 – To recognise different types of teasing and bullying (including online)**	• Children use a search engine to find specific relevant information to use in a presentation for a topic. **PSHE Links** **H12 – To know rues for keeping physically and emotionally safe including responsible ICT use and online safety.** **H16 – To know what is meant by 'privacy' their right to keep things private, the importance of respecting others' privacy.** **R13 – To recognise different types of teasing and bullying (including online)**
Control and Algorithms	• Control simple everyday devices to make them produce different outcomes.	• Control a device, on and off screen, making predictions about the effect their programming will have.

Computing	Year One	Year Two
Handling Information	As a class or individually with support, children use a simple pictogram or painting program to develop simple graphical awareness / one to one correspondence.	• Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. • Enter information into a simple branching database, database or word processor and use it to answer questions. • They save, retrieve and edit their work.
Modelling	Make simple choices to control a simple simulation program.	• Children are able to play an adventure game and use a simple simulation, making choices and observing the results. • Their conversation shows they understand that computers are good at replicating real life events and allowing them to explore contexts that are otherwise not possible.
Data Logging	•	•
Individual Technologies	Show an awareness of the range of devices and tools they encounter in everyday life •	• Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc.)
Understanding Technologies (network)	how an awareness that what they create on a computer or tablet device can be shown to others via another device (e.g. printer, projector, Apple TV)	• Begin to show an awareness that computers can be linked to share resources •
Understanding Technologies (the internet)		Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks)

Computing	Year Three	Year Four
Texts and Multimedia	• Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on-screen presentations which include hyperlinks. Begin to show an awareness of the intended audience and seek feed-back.	• Use advanced tools in word processing / DTP software such as tabs, appropriate text formatting, line spacing etc. appropriately to create quality presentations appropriate for a known audience.
Digital Images	• Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea. •	• Make a short film / animation from images (still and / or moving) that they have sourced, captured or created.
Sound and Music	• Create a simple podcast, selecting and importing already existing music and sound effects as well as recording their own.	• Create multiple track compositions that contain a variety of sounds.
Electronic Communication	• Begin to understand the need to abide by school e-safety rules.	• Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. • Where possible seek and respond to feedback.
Research and ESafety	• Using another curriculum area as a starting point, children ask their own questions then use ICT sources to find answers, making use of search engines, an index, menu, hyperlinks as appropriate. Children use the information or resources they have found. **PSHE Links**	• Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. • They show an understanding that not all information on the internet is accurate. **PSHE Links**

	H22 – Develop strategies for keeping safe online; the importance of protecting personal information. H25 – To know how to manage requests for images of themselves or others; what is and is not appropriate to ask for or share ; who to talk to if they feel uncomfortable.	**H22 – Develop strategies for keeping safe online; the importance of protecting personal information. H25 – To know how to manage requests for images of themselves or others; what is and is not appropriate to ask for or share ; who to talk to if they feel uncomfortable.**
Control and Algorithms	• Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen.	• Use control software to control devices (using output commands) or to simulate this on screen. Predict, test and refine their programming.

Computing	**Year Three**	**Year Four**
Handling Information	• Children use a simple database (the structure of which has been set up for them) to enter and save and save information on a given subject. • They follow straight forward lines of enquiry to search their data for their own purposes. • They talk about their experiences of using ICT to process data compared with other methods.	• Children work as a class or group to create a data collection sheet and use it to setup a straight forward database to answer questions. • Enter information and interrogate it (by searching, sorting, graphing etc.). • Begin to reflect on how useful the collected data and their interrogation was and whether or not their questions were answered.
Modelling	• Use models and simulations to find things out and solve problems. Recognise that simulations are useful in widening experience beyond the classroom. • Make simple use of a spreadsheet to store data and produce graphs.	• Set up and use a spreadsheet model to explore patterns and relationships. Make predictions. • Know how to enter simple formulae to assist this process. •

Data Logging	• Begin to use a data logger to sense physical data (sound, light, temperature).	• Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. • Interpret the results and use these in their investigations.
Individual Technologies	• Begin to show discernment in their use of computing devices and tools for a particular purpose and explain why their choice was made. **PSHE Links – H24 To develop the responsible use of mobile phones; safekeeping and safer use habits (time limits, use of passcodes, turning off at night)**	• Make choices about the devices and tools they use for specific purposes and explain them in relation to the context. **PSHE Links – H24 To develop the responsible use of mobile phones; safekeeping and safer use habits (time limits, use of passcodes, turning off at night)**
Understanding Technologies (network)	• Show an awareness of where passwords are critical in everyday use (e.g. parents accessing bank details)	• Show an understanding of the school network and how it links computers to resources in school and beyond.
Understanding Technologies (the internet)	• Show an awareness that not all the resources/tools they use are resident on the device they are using.	• Perform a search using different search engines and check the results against each other, explaining why they might be different. •

Computing	Year Five & Year Six Consolidation of previous skills and knowledge
Texts and Multimedia	Multimedia work shows restrained use of effects that help to convey meaning rather than impress.
Digital Images	Use images that they have sourced / captured / manipulated as part of a bigger project (e.g. presentation or document).
Sound and Music	Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience.
Electronic Communication	Abide by school rules for e-safety – share this information with younger pupils. Follow these rules at home, considering safe and appropriate use of social media.
Research and ESafety	• Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. • Use appropriate methods to validate information and check for bias and accuracy. • Repurpose and make appropriate use of selected resources for a given audiences, acknowledging material used where appropriate. **PSHE Links** **H22 – Develop strategies for keeping safe online; the importance of protecting personal information.** **H25 – To know how to manage requests for images of themselves or others; what is and is not appropriate to ask for or share ; who to talk to if they feel uncomfortable.**
Control and Algorithms	• Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). • Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose. •

Computing	Year Five & Year Six Consolidation of previous skills and knowledge
Handling Information	• Independently solve a problem by planning and carrying out data collection, by organising and analysing data involving complex searches using a database, and by drawing conclusions and presenting findings. • The need for accuracy is demonstrated and strategies for spotting implausible data are evident. • To be able to talk about issues relating to data protection and the need for data security in the world at large (e.g. health, police databases).
Modelling	• Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if …" questions and change variable in their model. • Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results. • Relate their use of spreadsheets to model situations to the wider world.
Data Logging	• To identify their own opportunities for data logging and carry out their own experiments. • They check and question results and are able to spot trends in data and identify when problems may have occurred.
Individual Technologies	• Evaluate the tools available to them including any that are unfamiliar or new and use them to solve problems. • Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools and devices. **PSHE Links – H24 To develop the responsible use of mobile phones; safekeeping and safer use habits (time limits, use of passcodes, turning off at night)**
Understanding Technologies (network)	• Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school.
Understanding Technologies (the internet)	• Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication