Computing

Head — Know more, remember more

Heart — Know yourself, grow yourself

Hands — Use your learning, develop your skills
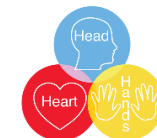
Curriculum overview

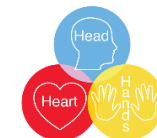| Year		Autumn	Spring	Summer
1	Strand			
	Termly Focus	E-safety	Word-processing/typing	Computational thinking
2	Strand			
	Termly Focus	E-safety	Word-processing/typing	Coding/programming
3	Strand			
	Termly Focus	E-safety	Word-processing/typing/presentations	Computational thinking
4	Strand			
	Termly Focus	E-safety	Word-processing/typing/presentations	Coding/programming
5	Strand			
	Termly Focus	E-safety	Word processing/typing, Presentations, web design and eBook creation	Computational thinking
6	Strand	Computer Science		
	Termly Focus	E-safety	Word processing/typing, Presentations, web design and eBook creation	Coding/Programming

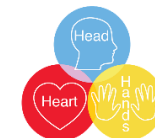| Year 1			
Autumn E-Safety	NC Links: Co2/1.5 recognise common uses of information technology beyond school Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	Skills to be developed in this unit: Privacy and Security - I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) - I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). - I can explain why I should always ask a trusted adult before I share any information about myself online. - I can explain how passwords can be used to protect information and devices.	Background Crucial Knowledge for this unit: Pupils can identify some simple examples of personal information (e.g. name, address, birthday, age, location). Pupils can describe the people they can trust and why they can trust them.
	Crucial Knowledge for individual lessons Lesson one - CK: online means connected to the internet and offline means not connected to the internet. Lesson Two - CK: To know when and why to take breaks from device time. Lesson Three - CK: • To understand the importance of being kind in the real world AND online. Lesson Four- CK: To compare how staying safe online is similar to staying safe in the real world. Lesson Five - CK: To understand the importance of online safety Lesson Six - CK: Rules to keep safe when using the internet	Vocabulary internet – a network that connects millions of computers all around the world online – connected to the internet offline – not connected to the internet website – page or collection of pages which link to each other on the internet safety – being protected from harm rules – instructions for how something should be done share – pass on photos or information permission / consent – when you ask someone if you can do something and they say yes.	Application of skills/ proof I have learnt this crucial knowledge: • Performing the online safety learning songs. • Verbal responses to questioning. • Written/drawn responses to lessons. • Teacher's observation notes.

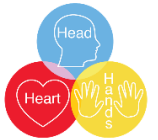|		Year 1	
Spring **Word Processing/Typing**	National Curriculum links: Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content	Skills developed in this unit: - I can confidently type words quickly and correctly on a digital device. - I can use the space bar to make space and delete to delete letters/words - I can make a new line using enter/return - I can dictate into a digital device more accurately and with punctuation.	Background Crucial Knowledge for this unit: Pupils know the letters of the alphabet and can find them on a keyboard.
	Crucial Knowledge for individual lessons: • A keyboard is used on technology to input information. • We use a QWERTY keyboard. • The home row of a keyboard is where you place your hands. • F and J has raised bumps on the keyboard as guidance to hand placement. • A mouse lets you move a cursor and input an action. • You can left click, right click and double click. Website idea: https://www.typingclub.com/sportal/program-16.game	Vocabulary QWERTY Keyboard Home row – keys A-L Top row – Keys Q-P Bottom row – Keys Z-M	Application of skills/ proof I have learnt this crucial knowledge: Cross curriculum – Typing up a piece of work to present. Use a digital device in English lessons using punctuation.
		Year 1	
Summ er	National Curriculum links: Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and that	Skills developed in this unit: - I understand what algorithms are - I can write simple algorithms	Background Crucial Knowledge for this unit:

programs execute by following precise and unambiguous instructions Co2/1.2 create and debug simple programs Co2/1.3 use logical reasoning to predict the behaviour of simple programs	- I understand the sequence of algorithms is important - I can debug simple algorithms - I understand that algorithms are implemented as programs on digital devices	Pupils can explain why it is important to follow instructions and the implications of following an instruction incorrectly.
Crucial Knowledge for individual lessons: - An algorithm is a series of specific instructions in order. - The sequence of an algorithm is important - Explain the choices made during mat design. - Algorithms are implemented as programs on digital devices - Algorithms can be used for simple tasks	Vocabulary instructions – written for someone who needs to know how to do something. program - set of instructions completed in order to achieve a task on a computer or toy debug – find and fix a problem in a program once – do it one time twice – do it two times Left Right Forward Backward	Application of skills/ proof I have learnt this crucial knowledge: Written algorithms for tasks (E.g. making a cup of tea, making toast with butter) Following an algorithm written to perform a task (Can link with PE – using the gymnastics equipment)

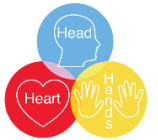| Year 2		
Autumn 2	NC Links: Co2/1.5 recognise common uses of information technology beyond school	Skills to be developed in this unit: Online Bullying	Background Crucial Knowledge for this unit:

Co2/1.6 use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies	- I can give examples of bullying behaviour and how it could look online. - I understand how bullying can make someone feel. - I can talk about how someone can/would get help about being bullied online or offline. <u>Privacy and Security</u> - I can describe why other people's work belongs to them. - I can recognise that content on the internet may belong to other people.	Pupils understand why bullying is wrong and can explain what bullying might look like. Pupils can identify some simple examples of personal information (e.g. name, address, birthday, age, location). Pupils can describe the people they can trust and why they can trust them.
<u>Crucial Knowledge for individual lessons</u> - Online bullying is still bullying - There are people who you can speak to about online bullying - Online bullying affects a person negatively - Work belongs to the person who created it - Information on websites have been written by people	<u>Vocabulary</u> Online – any time you are using the internet Citizen – being part of a group of people Digital citizen - being citizen means you are a part of the group of people who use the internet web browser – a program that allows you to go onto the internet. cyberbullying – when someone is bullied using the internet or mobile phones password – a secret word you need to get into somewhere personal information – information about you privacy – keeping your personal information to yourself private / confidential – something that you shouldn't tell other people. A password is confidential. search engine – used to search the world wide web	<u>Application of skills/ proof I have learnt this crucial knowledge:</u>

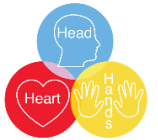| Year 2		
Spring Word	<u>National Curriculum links:</u> Co2/1.4 use technology purposefully to create, organise, store, manipulate and retrieve digital content	<u>Skills developed in this unit:</u> - I can use the space bar only once between words and use touch to navigate to words letter to edit - I can copy and paste images and text	<u>Background Crucial Knowledge for this unit:</u>

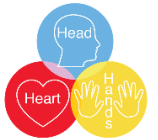|		- Use caps locks for capital letters. - I can add images alongside text in a word-processed document. - I can dictate longer passages into a digital device with accurate punctuation.	Pupils can recognise where the home row, top row and bottom row of keys are.
	Crucial Knowledge for individual lessons: - Each key on a keyboard has it's own unique job - There is more than one way to perform an action (Copy and paste/Caps) - The box around an image allows me to change the size - Some digital devices allow you to dictate your work	Vocabulary QWERTY Keyboard Home row – keys A-L Top row – Keys Q-P Bottom row – Keys Z-M Shift key Right click Left click Double click Delete key Back space Return key/Enter key	Application of skills/ proof I have learnt this crucial knowledge: Pupils should be able to describe the function of different keys on a keyboard (E.g. delete key, back space, space, caps lock, shift)
		Year 2	
Summer Computa...	National Curriculum links: Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and	Skills developed in this unit: - I understand programs execute by following precise and unambiguous instructions	Background Crucial Knowledge for this unit: Children can give simple instructions

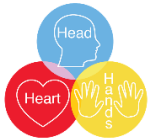|		
that programs execute by following precise and unambiguous instructions Co2/1.2 create and debug simple programs Co2/1.3 use logical reasoning to predict the behaviour of simple programs	- I can create programs on a variety of digital devices - I can debug programs of increasing complexity - I can use logical reasoning to predict the outcome of simple programs.	
Crucial Knowledge for individual lessons: - An algorithm is a series of specific instructions in order. - Use an algorithm to program a sequence on a floor robot. - Follow a sequence using information technology. - Predict the outcome of a sequence. - Explain the choices made during mat design. - Identify different routes around the mat. - Create an algorithm to meet my goal. - Use my algorithm to create a program. - Plan algorithms for different parts of a task. - Test and debug each part of the program.	**Extended Crucial Knowledge for this unit:** • Give clear and unambiguous instructions. • Create different algorithms for a range of sequences (using the same commands). • Show the difference in outcomes between two sequences that consist of the same commands. • Compare my prediction to the program outcome. • Explain what my algorithm should achieve. • Put together the different parts of my program.	**Application of skills/ proof I have learnt this crucial knowledge:** • Using bee bots or the bee bot emulator website for algorithms. • Verbal responses to questioning. • Written/drawn responses to lessons.
	Year 3	
Aut um	**NC Links:**	**Skills to be developed in this unit:** Online Relationships	**Background Crucial Knowledge for this unit:**

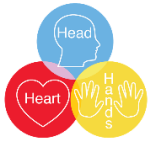|		
Co2/1.4 understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	- I can describe ways people who have similar likes and interests can get together online. - I can give examples of technology-specific forms of communication (e.g. emojis, acronyms, text speak). - I can explain some risks of communicating online with others I don't know well. - I can explain how my and other people's feelings can be hurt by what is said or written online. - I can explain why I should be careful who I trust online and what information I can trust them with. I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. - I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life. I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online'. **<u>Online bullying</u>** - I can explain what bullying is and can describe how people may bully others. - I can describe rules about how to behave online and how I follow them.	Pupils understand why bullying is wrong and can explain what bullying might look like. They can explain what the word 'relationship' might mean.

Crucial Knowledge for individual lessons	Vocabulary	Application of skills/ proof I have learnt this crucial knowledge:
- Online bullying is the use of electronic communication to bully a person. - Online bullying can be via messaging services using written or verbal communication or over social media. - If you feel unsafe online you can report and block the user or person. - If you feel unsafe, always tell a trusted adult about what has been going on. - Online bullying is just as serious as in person physical bullying and the consequences can be just as serious. - Don't talk to strangers online.	Online – any time you are using the internet Internet - a network that connects millions of computers all around the world Citizen – being part of a group of people Digital citizen - being citizen means you are a part of the group of people who use the internet web browser – a program that allows you to go onto the internet. search engine – used to search the world wide web for information or images key words – most important words. cyberbullying – when someone is bullied using the internet or mobile phones content – what is published on a webpage: information, photographs or videos	Create a poster/song about online bullying and online relationships.

Year 3			
Spring Word Processing/Typing	National Curriculum links: Co2/1.6 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.	Skills developed in this unit: • I can use index fingers on keyboard home keys (f/j), use left fingers for a/s/ d/f/g, and use right fingers for h/j/k/l • I can edit the style and effect of my text and images to make my document more engaging and eye-catching. For example, borders and shadows. • I can use cut, copy and paste to quickly duplicate and organise text.	Background Crucial Knowledge for this unit: • A keyboard is used on technology to input information. • We use a QWERTY keyboard. • The home row of a keyboard is where you place your hands. • F and J has raised bumps on the keyboard as guidance to hand placement. • A mouse lets you move a cursor and input an action.

		• You can left click, right click and double click.
Crucial Knowledge for individual lessons: - Editing the style and effect of my text and images can make my document more engaging and eye-catching. - Cut, copy and paste can quickly duplicate and organise my text. - I can use index fingers on keyboard home keys (f/j), use left fingers for a/s/d/f/g, and use right fingers for h/j/k/l	**Vocabulary** QWERTY Keyboard Home row – keys A-L Top row – Keys Q-P Bottom row – Keys Z-M Shift key Right click Left click Double click Delete key Back space Return key/Enter key Edit	**Application of skills/ proof I have learnt this crucial knowledge:** Typing up a piece of work or creating an informative poster (linked to a foundation subject)

Year 3

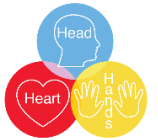|			
Summer Computational thinking	**National Curriculum links:** Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 understand computer networks including the internet; how they can provide multiple services, such as the world-	**Skills developed in this unit:** - I can create algorithms for use when programming - I can decompose tasks (such as animations) into separate steps to create an algorithm - I understand abstraction is focusing on important information - I can identify patterns in an algorithm I can use repetition in algorithms	**Background Crucial Knowledge for this unit:** Pupils can create simple instructions and follow a series of simple instructions

wide web; and the opportunities they offer for communication and collaboration

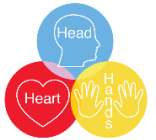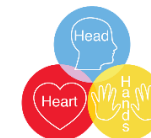| Crucial Knowledge for individual lessons:	Vocabulary	Application of skills/ proof I have learnt this crucial knowledge:
- An algorithm is a precise set of instructions, which can be turned into a code. - Coding is how we communicate with computers. - Codes tell a computer what action it should take. - A sequence is steps carried out in order by the computer. - A command is a specific instruction given to the computer to ensure it performs a specific task/function. - A bug is a mistake in the code. - Debugging is checking the code for a bug and removing the bug if there is one. - Programming is writing code.	algorithm – set of instructions code – set of instructions written for a computer precise – say exactly what you want a person or a program to do sequence – the order things happen in input – what we put into a computer, eg pressing a key or clicking decompose – break something down into smaller parts order – when something happens Scratch – a programming language designed for children, Can be used to make stories, animations and games blocks – puzzle-shaped pieces in Scratch which click together sprite – objects or images in Scratch debug – spot and fix a mistake in a program background - picture at the back of the scene	Create simple algorithms for peers to follow Create simple algorithms on Scratch Jr

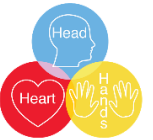| Year 4			
Autumn E-Safety	NC Links: Co2/1.4 understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Skills to be developed in this unit: **Privacy and Security** - I can explain what a strong password is. - I can describe strategies for keeping my personal information private, depending on context. - I can explain that others online can pretend to be me or other people, including my friends - I can suggest reasons why they might do this - I can explain how internet use can be monitored. **Managing online information** - I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. - I understand what criteria have to be met before something is a 'fact'. - I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). - I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. - I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. - I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.	Background Crucial Knowledge for this unit: E-safety is Electronic Safety and it is the act of staying safe online or on any technological device. - Reliable means you can trust something. - Fact is a statement that is true. - Opinion is someone's point of view. - Fiction is made up.

Crucial Knowledge for individual lessons	Vocabulary	Application of skills/ proof I have learnt this crucial knowledge:
- It is important to search safely and using the correct key words when searching so nothing inappropriate comes up. - Green ticks and well known websites are the best websites to click on to get information. - Pop-up boxes can also alert people to when sites are not safe. They can often issue a warning before entering unsafe sites. - It is important to search safely on google images. - If an inappropriate image comes up, report it and tell a trusted adult. - Don't tell log ins and passwords – they are private. - Don't give out personal details – these are private. - The internet contains fact, fiction and opinion. - Information on the internet is not always accurate or reliable. - Know different ways to check the reliability of online information.	search results – web pages which appear in a list after you search the internet ranking – where a webpage appears in the list trustworthy – able to be trusted privacy settings – settings you can change to control who sees you and your information online age-rating – a guide for children and parents to show what ages a game or an app is suitable for Online – any time you are using the internet Internet - a network that connects millions of computers all around the world Citizen – being part of a group of people Digital citizen - being citizen means you are a part of the group of people who use the internet web browser – a program that allows you to go onto the internet. search engine – used to search the world wide web for information or images key words – most important words. cyberbullying – when someone is bullied using the internet or mobile phones content – what is published on a webpage: information, photographs or videos	Create an E-Safety poster

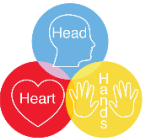|			
		Year 4	
Spring **Word Processing/Typing/Presentations**	National Curriculum links: Co2/1.6 select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Skills developed in this unit: Word processing/Typing - I can combine digital images from different sources, objects, and text to make a final piece of a variety of tasks: posters, documents, eBooks, scripts, leaflets. - Confidently and regularly use text shortcuts such as cut, copy and paste and delete to organise text - Use font sizes appropriately for audience and purpose. - Use spell check and thesaurus including through Siri and other AI technology Presentations - I can create an interactive quiz eBook introducing hyperlinks. - I can create an eBook with text, images and sound. - I can create a presentation demonstrating my understanding with a range of media. - I can create a digital timeline/mind map and include different media - sound and video.	Background Crucial Knowledge for this unit: • A keyboard is used on technology to input information. • We use a QWERTY keyboard. • The home row of a keyboard is where you place your hands. • F and J has raised bumps on the keyboard as guidance to hand placement. • A mouse lets you move a cursor and

			input an action. • You can left click, right click and double click.
	Crucial Knowledge for individual lessons: - Digital images from different sources, objects and text can be combined - There are multiple programs to create presentations with - Font sizes can be changed for audience and purpose. - A red line under a word indicates that it has been spelt incorrectly - A blue line under a word indicates a grammatical error - Computers have built in spellcheckers - Presentations can be interactive and should be made for a purpose	Extended Crucial Knowledge for this unit: presentation - a collection of individual slides that contain information on a topic. slide – a single screen in a presentation transition – the change from one image in a slide show to the next. hyperlink – also known as a link or web link, a hyperlink is an icon, graphic or text in a document that links to another file or object. data logger - a device that records data over time. This could be temperature, light, noise, heart rate. data – information, usually in numbers sensor – a device that detects, or senses, an input graph - drawings that show mathematical information with lines, shapes, and colours. Graphs are also known as charts. People use graphs to compare amounts of things or other numbers	Application of skills/ proof I have learnt this crucial knowledge: Create an interactive quiz. Create an eBook Create a presentation (can be for celebration assembly)

	Year 4		
Summer Coding/Programming	<u>National Curriculum links:</u> Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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	<u>Skills developed in this unit:</u> - I can use simple selection in programs - I can work with various forms of output - I can use logical reasoning to systematically detect and correct errors in programs - I can work with various forms of output	<u>Background Crucial Knowledge for this unit:</u>
	<u>Crucial Knowledge for individual lessons:</u> - An algorithm is a precise set of instructions, which can be turned into a code. - Coding is how we communicate with computers. - Codes tell a computer what action it should take. - A sequence is steps carried out in order by the computer. - A command is a specific instruction given to the computer to ensure it performs a specific task/function. - A bug is a mistake in the code. - Debugging is checking the code for a bug and removing the bug if there is one. - Programming is writing code.	<u>Vocabulary</u> sequence – one thing following another repeat – do something again code – instructions written for a digital device repetition – when something is repeated more than once loop - an event or pattern of events repeated count-controlled – done a certain number of times indefinite – carries on without stopping sprite – object or image in Scratch	<u>Application of skills/ proof I have learnt this crucial knowledge:</u> Creating a game in scratch

Year 5		
NC Links: Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	**Skills to be developed in this unit:** **Online relationships** - I can explain that there are some people I communicate with online who may want to do me or my friends harm. - I can recognise that this is not my/our fault. - I can make positive contributions and be part of online communities. - I can describe some of the communities in which I am involved and describe how I collaborate with others positively. **Online Bullying** - I can recognise when someone is upset, hurt or angry online. - I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. - I can explain how to block abusive users. - I can explain how I would report online bullying on the apps and platforms that I use. - I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).	**Background Crucial Knowledge for this unit:** Crucial knowledge from previous years.
Crucial Knowledge for individual lessons - Online bullying is the use of electronic communication to bully a person.	**Extended Crucial Knowledge for this unit:** - To be aware of the age restrictions when using certain apps - Understanding why applications have age restrictions.	**Application of skills/ proof I have learnt this crucial knowledge:**

(Left margin, vertical text: Autumn E-Safety)
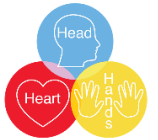
	- Online bullying can be via messaging services using written or verbal communication or over social media. - If you feel unsafe online you can report and block the user or person. - If you feel unsafe, always tell a trusted adult about what has been going on. - Online bullying is just as serious as in person physical bullying and the consequences can be just as serious. - Don't talk to strangers online. - People online aren't always who the seem to be - You can collaborate with others positively.		Posters explaining the pros and cons of playing games with others online Online bullying poster (applying word processing skills)
	Year 5		
Spring Word Processing/Typing/presentations	National Curriculum links: Co2/1.6 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.	Skills developed in this unit: Word Processing/Typing - I can start to apply other useful effects to my documents such as hyperlinks. - I can import sounds to accompany and enhance the text in my document. - I can organise and reorganise text on screen to suit a purpose Presentations - I can collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365 - I can create and export an interactive presentation including a variety of media, animations, transitions and other effects. - I can create an interactive guide to a image by embedding digital content and publishing it online.	Background Crucial Knowledge for this unit:

		- I can create a webpage and embed video.	
	Crucial Knowledge for individual lessons: - Digital images from different sources, objects and text can be combined - There are multiple programs to create presentations with - Font sizes can be changed for audience and purpose. - A red line under a word indicates that it has been spelt incorrectly - A blue line under a word indicates a grammatical error - Computers have built in spellcheckers - Presentations can be interactive and should be made for a purpose	Vocabulary presentation - a collection of individual slides that contain information on a topic. slide – a single screen in a presentation transition – the change from one image in a slide show to the next. hyperlink – also known as a link or web link, a hyperlink is an icon, graphic or text in a document that links to another file or object. data logger - a device that records data over time. This could be temperature, light, noise, heart rate. data – information, usually in numbers sensor – a device that detects, or senses, an input graph - drawings that show mathematical information with lines, shapes, and colours. Graphs are also known as charts. People use graphs to compare amounts of things or other numbers	Application of skills/ proof I have learnt this crucial knowledge: Tie in with English Create PowerPoints for weekly celebrations assembly

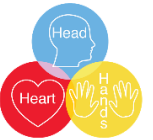| Year 5			
Summer Computational	National Curriculum links: Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output	Skills developed in this unit: - I can solve problems by decomposing them into smaller parts - I can use selection in algorithms - I can recognise the need for conditions in repetition within algorithms	Background Crucial Knowledge for this unit: - An algorithm is a precise set of instructions, which can be turned into a code.

Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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	- I can use logical reasoning to explain how a variety of algorithms work - I can use logical reasoning to detect and correct errors in algorithms - I can evaluate my work and identify errors	- Coding is how we communicate with computers. - Codes tell a computer what action it should take. - A sequence is steps carried out in order by the computer. - A command is a specific instruction given to the computer to ensure it performs a specific task/function. - A bug is a mistake in the code. - Programming is writing code.
Crucial Knowledge for individual lessons: - Debugging is checking the code for an error and removing the error if there is one. - Problems can be solved by decomposing them into smaller parts - Logical reasoning can be used to detect and correct errors in algorithms	Vocabulary selection - decisions in which what the program does depends on whether or not certain conditions are met condition – if something happens, eg if...then operation – what the program does loop – action repeated over and over	Application of skills/ proof I have learnt this crucial knowledge: Create a game on scratch

Year 6		
Autumn E-Safety	NC Links: Co2/1.4 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 Co2/1.5 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Co2/1.7 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Skills to be developed in this unit: Managing online information - I can use search technologies effectively. - I can explain how search engines work and how results are selected and ranked. - I can demonstrate the strategies I would apply to be discerning in evaluating digital content. - I can describe how some online information can be opinion and can offer examples. - I can explain how and why some people may present 'opinions' as 'facts'. - I can define the terms 'influence', manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). - I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. - I can identify, flag and report inappropriate content. Privacy and Security - I use different passwords for a range of online services. - I can describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories).	Background Crucial Knowledge for this unit: Previous years crucial knowledge.

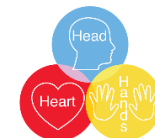|			
		- I know what to do if my password is lost or stolen. - I can explain what app permissions are and can give some examples from the technology or services I use. - I can describe simple ways to increase privacy on apps and services that provide privacy settings. I can describe ways in which some online content targets people to gain money or information illegally; - I can describe strategies to help me identify such content (e.g. scams, phishing)	
	<u>Crucial Knowledge for individual lessons</u> - Use technology safely, respectfully and responsibly - Recognise acceptable/unacceptable behavior - Know how to use a range of ways to report concerns about content and contact. - Know that what I do online has an impact on my digital footprint - Know the legal consequences to my actions online - Using different passwords for a range of online services will keep me better protected - There are effective strategies to help manage a range of passwords - There are things that I can do to help increase privacy on apps that I use.	<u>Extended Crucial Knowledge for this unit:</u> • To be aware of the age restrictions when using certain apps • Understanding why applications have age restrictions.	<u>Application of skills/ proof I have learnt this crucial knowledge:</u> Children will have a better understanding of why privacy and security are so important online.

Year 6		
National Curriculum links: Co2/1.6 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.	**Skills developed in this unit:** **Word Processing/Typing** - I can confidently choose the best application to demonstrate my learning. - I can format text to suit a purpose. - I can publish my documents online regularly and discuss the audience and purpose of my content. **Presentations** - I can create a web site which includes a variety of media. - I can design an app prototype that links multimedia pages together with hyperlinks. - I can choose applications to communicate to a specific audience. - I can evaluate my own content and consider ways to improvements.	**Background Crucial Knowledge for this unit:** Previous years crucial knowledge
Crucial Knowledge for individual lessons: - Digital images from different sources, objects and text can be combined - There are multiple programs to create presentations with - Font sizes can be changed for audience and purpose. - A red line under a word indicates that it has been spelt incorrectly - A blue line under a word indicates a grammatical error - Computers have built in spellcheckers	**Vocabulary** presentation - a collection of individual slides that contain information on a topic. slide – a single screen in a presentation transition – the change from one image in a slide show to the next. hyperlink – also known as a link or web link, a hyperlink is an icon, graphic or text in a document that links to another file or object.	**Application of skills/ proof I have learnt this crucial knowledge:**

(Row label, left column, rotated text): Spring — Word Processing/Typing/Presentations

	- Presentations can be interactive and should be made for a purpose	data logger - a device that records data over time. This could be temperature, light, noise, heart rate. data – information, usually in numbers sensor – a device that detects, or senses, an input graph - drawings that show mathematical information with lines, shapes, and colours. Graphs are also known as charts. People use graphs to compare amounts of things or other numbers	
		Year 6	
Summer Coding/Programming	National Curriculum links: Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Co2/1.4 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	Skills developed in this unit: - I can recognise, and make use of patterns across programming projects - I can write precise algorithms for use when programming - I can identify variables needed and their use in selection and repetition - I can decompose code into sections for effective debugging - I can critically evaluate my work and suggest improvements	Background Crucial Knowledge for this unit:

Crucial Knowledge for individual lessons:	Vocabulary	Application of skills/ proof I have learnt this crucial knowledge:
- An algorithm is a precise set of instructions, which can be turned into a code. - Coding is how we communicate with computers. - Codes tell a computer what action it should take. - A sequence is steps carried out in order by the computer. - A command is a specific instruction given to the computer to ensure it performs a specific task/function. - A bug is a mistake in the code. - Programming is writing code. - Debugging is checking the code for an error and removing the error if there is one. - Problems can be solved by decomposing them into smaller parts - Logical reasoning can be used to detect and correct errors in algorithms	variable – a box with numbers in it. These numbers can be increased and decreased and made to control various parts of a project procedure - grouped code that can be used lots of times by referring to the name local – applies to one thing global – applies to everything loop – action repeated over and over nested loop – a loop within a loop	