Whole School Chuckery Computing Curriculum

Phase	Year group	Topic name	Enquiry	NC focus	Disciplinary concepts	Substantive concepts	Key knowledge
KS1	Year 1	Online safety	How do we log on and keep our work safe?	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.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• Children to log in and cover the AUP. • Children to create their own avatar and discuss why we use avatars to keep safe. • Children learn how to save their work safely and access it and comments from the teachers. • To explore the tools and how to print, open and new. • Children understand the importance of logging out when they are finished and shutting down.
		Grouping and sorting	How can we use technology to organise information?	use technology purposefully to create, organise, store, manipulate and retrieve digital content	We can use and choose different software confidently to undertake projects.	Computer science	• To sort items using a range of criteria. (Children can organise offline information linked to a criteria) • To sort items on the computer using the 'Grouping' activities in Purple Mash. (Children to use online materials to sort things due to a criteria)
		Pictograms	What is the best way to present class data?	use technology purposefully to create, organise, store, manipulate and retrieve digital content	We can use and choose different software confidently to undertake projects.	Information technology	• Children understand what data is and how it can be shown in an image. (EG- the transport used to travel to school) • Demonstrate how we create a pictogram. Roll a dice with the children and present this data as a pictogram. (Link to statistics) • Create a class pictogram- Boys and girls, how children get to school, Favourite fruit etc.
		Lego builders	Why do we follow instructions, especially in instructions?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Look at the importance of following instructions. EG- give them a task with a simple instruction, get them to do it again with more explicit instructions and discuss why that is better. • Introduce the word algorithm. • Ask the children to follow instructions given on the computer to complete their task. • Get the children to give specific instructions to the computer to complete a task for them. • Look at how the order of instructions can alter the results. • Children organise the steps in a recipe (or link to their mini-adventure work). Check it works and alter if needed. Talk about how this is called de-bugging

		Maze explorers	How do we program games to move direction?	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children need to understand what a direction key is and how to use them. • Children to explore the program and how to undo changes and how to move characters around. • Children begin to create a simple algorithm and start to debug it. • Children begin to adapt their background and challenge. • Children create new algorithms and make them longer to complete challenges. • Children trial each other's challenges.
		Animated story books	How do we merge books and technology?	use technology purposefully to **create**, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school	We can use and choose different software confidently to undertake projects.	Information technology	• To understand the difference between traditional books and e-books. • To explore the tools to create images and add text. • Children input text to begin to create an e-book. • Children know how to play their e-book and overwrite by saving additional changes. • Children can play their existing book and decide where and how to add sound effects or music. • Children demonstrate good understanding of tools by adding backgrounds to finish off their e-book.
		Coding	How do we give a computer an instruction?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children understand that computers follow instructions called code. • Children predict what might happen when instructions are followed. • Children begin to use code to make a computer program. • Children understand what objects and actions are. • Children understand what an event is. • Children use an event to control an object. • To understand how code works when you run a program. • To plan a computer program. • To make a computer program.
		Spreadsheets	How can we store data on a computer?	use technology purposefully to create, organise, store, manipulate and retrieve digital content	We can use and choose different software confidently to undertake projects.	Information technology	• To understand what a spreadsheet is and looks like. • To be able to enter data into cells. • To be able to 'move' and 'lock' cells. • To use the 'speak' and 'count' tools to count data and items in a spreadsheet.
		Technology outside of school	How is technology used outside of the classroom?	use technology safely and respectfully, keeping personal information private; identify	We use and understand the benefits, disadvantages	Digital literacy	• To understand what technology is. • To understand where and how technology is used in the local community.

				where to go for help and support when they have concerns about content or contact on the internet or other online technologies. recognise common uses of information technology beyond school	and dangers of computer networks including the internet.		• To record where technology is used outside of school and why it is used.
	Year 2	Online safety	How do we stay safe online?	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.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• To know how we search online and how to refine searches. • To understand why we need to search for appropriate information and what to do if we find something that scares, upsets or worries us. • To understand what an email is. • To understand how we speak to people when they are not in front of us. • To open and send an email. • To understand that the information we put online leaves a digital footprint. • Children can think critically about the information they're leaving online. • Children can identify steps that can be taken to keep personal information private.
		Spreadsheets	How can we use a spreadsheet?	use technology purposefully to create, organise, store, manipulate and retrieve digital content	We can use and choose different software confidently to undertake projects.	Information technology	• Children to recap what they know about spreadsheets. • Children can label, cells, rows, columns. • Children can understand how to save and edit a spreadsheet. • Children can use the cutting, copying and pasting function. • Children can use the tools to total the rows and columns automatically. • Children can solve mathematical puzzles using their spreadsheets. • Children can relate their spreadsheet to real life by calculating which coins they need to match to the price of objects. (link to maths) • Children can create a table of their data. • Children can use the data to manually create a block graph.
		Questioning	How can questions be used across computing?	use technology purposefully to create, organise, store,	We can use and choose different software	Information technology	• To show that the information provided on pictograms is of limited use beyond answering simple questions. • To use yes/no questions to separate information. • To understand what a binary tree is.

				manipulate and retrieve digital content	confidently to undertake projects.		• Children use the binary tree to answer more complicated questions. • Children to create their own binary tree. • Children understand what a database is. Children use the search tool to find information and understand how databases help us to find information and answer questions.
		Effective searching	How can we help people understand how to effectively search online.	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.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• Children need to recall terminology linked to effective searching. • Children identify search engines and what key words we would use for effective searching. • Children create a leaflet to help someone search for information on the internet.
		Coding	How do we make sure that computer programs run smoothly?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children understand what an algorithm is and create a computer program using an algorithm. • Children can plan an algorithm including collision detection. • Children create an algorithm that follows a timed sequence. • To understand that different objects have different attributes (properties). • To understand what different events do in code. • To create a program using a given design. • To understand the function of buttons in a program • To know what debugging means. • To understand the need to test and debug a program repeatedly. • To debug simple programs.
		Creating pictures	How can technology be used to create art?	recognise common uses of information technology beyond school	We can use and choose different software confidently to undertake projects.	Information technology	• Children can explain what impressionist art is and how we create a picture on the computer. • To look at the work of pointillist artists such as Seurat. • To recreate pointillist art using the Pointillism template. • To look at the work of Piet Mondrian and recreate it using the Lines template. • Children can describe the main features of art that uses repeating patterns.

							• Children can use 2Paint a Picture to create art by repeating patterns in a variety of ways. • Children can combine more than one effect in 2Paint a Picture to enhance patterns • Children can describe surrealist art. • Children can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart.
		Making Music	How is technology involved in the creation of music?	recognise common uses of information technology beyond school	We can use and choose different software confidently to undertake projects.	Information technology	• Children understand what 2Sequence is and how it works. • Children have used the different sounds within 2Sequence to create a tune. • Children have explored how to speed up and slow down tunes. • Children understand what happens to the tune when sounds are moved. • Children can add sounds to improve their tune. • Children understand how music can be used to express feelings. They can think about this when adding sounds and volume to their music. • Children can record and upload their own sounds. • The children can then create their own final piece including their own sounds.
		Presenting ideas	How does technology aid our presentations?	recognise common uses of information technology beyond school	We can use and choose different software confidently to undertake projects.	Information technology	• Children have examined a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file. • Children know that digital content can be represented in many forms. • Children can talk about their work and make improvements based on suggestions and feedback. • Children can extract information from a 2Connect file to make a publisher fact file on a non-fiction topic. • Children can add appropriate clipart or images. • Children know that data can be structured in tables to make it useful. • Children can use a variety of software to manipulate and present digital content and information. • Children can collect, organise and present data and information in digital content. • Children can create digital content to achieve a given goal by combining software packages.
LKS2	Year 3	Online safety	Can we trust everything we find online?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a	We use and understand the benefits, disadvantages and dangers of computer	Digital literacy	• Children have gone through the AUP and they understand what makes a good password. • Children can contribute to a concept map of all the different ways they know that the Internet can help us to communicate.

				range of ways to report concerns about content and contact.	networks including the internet.		• Children have contributed to a class blog with clear and appropriate messages. • Children can understand that some information held on websites may not be accurate or true. • Children are beginning to understand how to search the Internet and how to think critically about the results that are returned. • Children have accessed and assessed a 'spoof' website. • Children have created their own 'spoof' webpage mock-up to show how it can be done. • Children can identify some physical and emotional effects of playing/watching inappropriate content/games. • Children relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting.
		Touch typing	How can we ensure we use computers effectively?	use technology safely, respectfully and responsibly;	We use and understand the benefits of computers and how to use them effectively.	Information technology	• Children understand typing terminology including the name of the fingers. • Children know how to use the home, top and bottom row keys. • Children use two hands to improve their typing for the home, top and bottom row keys. • Children can touch type using the left hand. • Children can touch type using the right hand. • Children can touch type successfully with both hands for the correct keys.
		Emails and email safety	How can computers be used for communication?	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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet. We can use and choose different software confidently to undertake projects.	Digital literacy	• Children understand the different ways of communicating. • Children can identify advantages and disadvantages of the different communications. • Children can use an address book to find contacts. • Children can open an email and respond to the email appropriately. • Children understand how to stay safe when using emails. • Children can create email rules to help others stay safe emailing. • Children create a quiz to go with their email safety leaflet to check the children's knowledge of email safety. • Children create an email and attach their leaflet and quiz to the email. • Children understand what cc means. • Children read and respond to a series of email communications.

							• Children can demonstrate their ability to attach and cc or Bcc.
		Spreadsheets	How can we spreadsheets to present data?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children can recall their learning about spreadsheets from Year 2. • Children can describe a cell location using the notion of letters and numbers. • Children can find specific locations in a spreadsheet. • Children can create a table on a spreadsheet. • Children can turn this table into a chart or graph. • Children understand the 'more than', 'less than' and 'equals' tools to compare different numbers to help them solve calculations. • Children can use the 'spin tool'
		Coding	How is coding used to create interactive scenes?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children can recall and use terminology from coding in Year 2. • Children can read and explain a flowchart. • Children can use a flowchart to create a computer program. • Children can create a computer program that uses click events and timers. • Children can create a program that uses a timer-after command. • Children can create a program that uses a timer-every command. • Children understand there can be different ways to solve a problem. • Children understand how the turtle object moves. • Children can use the repeat command with an object. • Children can create a computer program that includes use of the repeat command. • Children can create computer programs using prior knowledge. • Children can run, test and debug their programs. • Children can consider nesting when debugging their programs. • Children can use the attributes (properties) table to set the attributes of objects. • Children can plan their scene and code before they create their program. • Children can confidently make several different things happen in a program. **(This may run over the course of 2 lessons.)**

		Branching databases	How can we use databases to show our opinions and choices?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children understand how YES/NO questions are structured and answered. • Children have used YES/NO questioning to play a simple game with a friend. • Children can explain why they choose a particular question to split their database. • Children can begin to use 'or more' and 'or less' in their questioning. • Children have contributed to a generic class branching database about fruit. • Children have completed a generic branching database about vegetables. • Children can edit and adapt a branching database to accommodate new entries. • Children can choose a suitable topic for a branching database. • Children can select and save appropriate images. • Children can create a branching database. • Children know how to use and debug their own and others branching databases.
		Simulation	How can we think like computer programmers to text simulations?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children know that a computer simulation can represent real and imaginary situations. • Children can give some examples of simulations used for fun and for work. • Children can give suggestions of advantages and problems of simulations. • Children can explore a simulation. • Children can use a simulation to try out different options and to test predictions. • Children can begin to evaluate simulations by comparing them with real situations and considering their usefulness. • Children can analyse choices made using a branching database. • Children can recognise patterns within simulations and make and test predictions. • Children can identify the relationships and rules on which the simulations are based. • Children can evaluate a simulation to determine its usefulness for purpose. • Children can create their own simple simulation.
		Graphing	How can technology help solve investigations?	use search technologies effectively, appreciate how results are selected and ranked, and be	We use and understand the benefits, disadvantages	Information technology	• Children understand the terminology for graphs. • Children can set up a graph with a given number of fields. • Children can enter data for a graph.

				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	and dangers of computer networks. We can use and choose different software confidently to undertake projects.		• Children can produce and share graphs made on the computer. • Children can select most appropriate style of graph for their data and explain their reasoning. • Children have solved a maths investigation. • Children can present the results in a range of graphical formats. • Children can use the sorting option to make analysis of their data easier. • Children can select most appropriate style of graph for their data and explain their reasoning.
		Presenting (Google Slides)	How can we use technology to present an idea?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children understand what Google Slides is. • Children can open and navigate to Google Slides. • Children can add text and format it. • Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures. • Children can edit pictures. • Children can insert video. • Children can add shapes to a presentation. • Children can add lines into a presentation. • Children can use animations and transitions in a presentation. • Children can add text to a presentation. • Children can add objects including text and pictures to their presentation. • Children can add animation and transitions to their presentation. • Children can present their work on Slides
	<u>Year 4</u>	Online safety	How can the online world trick and harm us?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• Children know that security symbols such as a padlock protect their identity online. • Children know the meaning of the term ‘phishing’ and are aware of the existence of scam websites. • Children can explain what a digital footprint is and how it relates to identity theft. • Children can give examples of things that they would not want to be in their digital footprint. • Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Children know what a computer virus is.

							• Children can identify possible risks of installing free and paid for software. • Children understand what copyright is. • Children can determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it • Children know about citing sources that they have used. • Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time.
		Effective searching	How do we know if we can trust the internet?	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	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Information technology	• Children understand that they need to use key specific words to generate an accurate search. • Children can structure search queries to locate specific information. • Children have used search to answer a series of questions. • Children have written search questions for a friend to solve. • Children can analyse the contents of a web page for clues about the credibility of the information.
		Spreadsheets	How can spreadsheets help us to plan and organise an event?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children can recall their knowledge of spreadsheets from the previous year, including key vocabulary. • Children can use the number formatting tools within 2Calculate to appropriately format numbers. • Children can add a formula to a cell to automatically make a calculation in that cell. • Children can use the timer, random number and spin button tools. • Children can combine tools to make fun ways to explore number. • Children can use a series of data in a spreadsheet to create a line graph. • Children can use a line graph to find out when the temperature in the playground will reach 20°C. • Children can allocate values to images and use these to explore place value.

							• Children can use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept. • Children can make practical use of a spreadsheet to help them plan actions. • Children can use the currency formatting in 2Calculate.
		Animation	How can we turn a flip book into a film?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children have put together a simple animation using paper to create a flick book. • Children understand animation frames. • Children have made a simple animation using 2Animate. • Children know what the Onion Skin tool does in animation. • Children can use the Onion Skin tool to create an animated image. • Children can use backgrounds and sounds to make more complex and imaginative animations. • Children know what 'stop motion' animation is and how it is created. • Children have used ideas from existing 'stop motion' films to recreate their own animation. • Children then plan their own stop-motion animation. • Children plan and create their own stop motion animation. Children can use stop motion studio. • Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash.
		Coding	How are computer games created?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children can explore different object types in 2Code. • Children can use a background and objects to create a scene. • Children can plan an algorithm for their scene and use 2Code to program it. • Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement. • Children can make use of the X and Y attributes (properties) of objects in their coding. • Children can create a program that includes an IF statement. • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes an IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement. • Children can explain what a variable is in programming.

				detect and correct errors in algorithms and programs			• Children can create and use variables when programming. • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes and IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement.
		Writing for different audiences	How does technology aid multiple professions?	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 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	We can use and choose different software confidently to undertake projects.	Information technology	• Children can look at and discuss a variety of written material discussing how the font size and type are tailored to the purpose of the text. • Children can use text formatting to make a piece of writing fit for its audience and purpose. • Children can role-play the job of a journalist in a newsroom. • Children can interpret a variety of incoming communications and use these to build up the details of a story. • Children can use the incoming information to write their own newspaper report. • Children can use 2Connect to mind-map ideas for a community campaign. • Children can use these ideas to write a persuasive letter or poster as part of the campaign. • Children can assess their texts using criteria to judge their suitability for the intended audience
		LOGO	How are logos produced?	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	We can use and choose different software confidently to undertake projects.	Computer science	• Children know what the common instructions are in 2Logo and how to type them. • Children can follow simple 2Logo instructions to create shapes on paper. • Children can follow simple instructions to create shapes in 2Logo. • Children can create 2Logo instructions to draw patterns of increasing complexity. • Children understand the pu and pd commands. • Children can write 2Logo instructions for a word of four letters. • Children can follow 2Logo code to predict the outcome. • Children can create shapes using the Repeat command.

							• Children can find the most efficient way to draw shapes. • Children can use the Procedure feature. • Children can create 'flowers' or 'crystals' using 2Logo.
		Hardware investigators	How are computers built?	select, use and combine a variety of software	We can use and choose different software confidently to undertake projects	Computer science	• Children can name the different parts of a desktop computer. • Children know what the function of the different parts of a computer is. • Children have created a leaflet to show the function of computer parts. • **Or** whilst creating their leaflets, groups of children could work with Mr Riley to build a computer tower.
		Making music	How has the digital age changed music?	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	We can use and choose different software confidently to undertake projects	Information technology	• Children can compare a piece of classical music to electronic music • Children can use appropriate musical language to discuss a piece of music. • Children can identify sounds in a piece of music. • Children can explain how a piece of music makes them feel. • Children can identify and recall a simple rhythm. • Children can explain what tempo is, and how changing it can change the mood of a piece of music. • Children can create their own simple rhythm using Busy Beats. • Children can show an understanding of melody. • Children can create a simple melodic pattern using 2Sequence and Busy Beats. • Children can use a variety of notes, experimenting with pitch. • Children can explore and understand how music is created. • Children can experiment with pitch, rhythm, and melody to create a piece of house music on Busy Beats.
UKS2	Year 5	Online safety	How can we ensure sources are reliable?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• Children critically think about the information that they share online both about themselves and others. • Children know who to tell if they are upset by something that happens online. • Children can use the SMART rules as a source of guidance when online. • Children think critically about what they share online, even when asked by a usually reliable person to share something. • Children have clear ideas about good passwords. • Children can see how they can use images and digital technology to create effects not possible without technology.

							• Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools. • Children can cite all sources when researching and explain the importance of this. • Children select keywords and search techniques to find relevant information and increase reliability. • Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each.
		Databases	What are the most effective ways to store personal data on a computer?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children understand the different ways to search a database. • Children can search a database to answer questions correctly. • Children can design an avatar for a class database. • Children can successfully enter information into a class database. • Children can create their own database on a chosen topic. • Children can add records to their database. • Children know what a database field is and can correctly add field information. • Children understand how to word questions so that they can be effectively answered using a search of their database.
		Spreadsheets	How can spreadsheets help up to organise a fundraiser?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children can recall key information about spreadsheets from previous years. • Children can recall key terms such as cell, column, row. • Children can find and identify certain cells. They can input data into cells. • Children can use the sum formula to add a total in the spreadsheet. • Children can use the autofill tool to calculate the totals and calculate times table columns. • Children can create simple formulae that use different variables. • Children can create a formula that will work out how many days there are in x number of weeks or years. • Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.
		Concept maps	How can technology make group work easier?	understand computer networks including the internet; how they can provide multiple services, such as the	We can use and choose different software confidently to	Information technology	• Children can make connections between thoughts and ideas. • Children can see the importance of recording concept maps visually.

				world wide web; and the opportunities they offer for communication and collaboration	undertake projects.		• Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections.' • Children can create a basic concept map. • Children have used 2Connect Story Mode to create an informative text. • Children have used 2Connect collaboratively to create a concept map. • Children have used Presentation Mode to present their concept maps to an audience.
		Coding	How can coding be made more efficient?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children can use simplified code to make their programming more efficient. • Children can use variables in their code. • Children can create a simple playable game. • Children can plan an algorithm modelling the sequence of traffic lights. • Children can select the right images to reflect the simulation they are making. • Children can use their plan to program the simulation to work in 2Code. • Children can make good attempts to break down their task into smaller achievable steps. • Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task. • Children can create a program which represents a physical system. • Children can create and use functions in their code to make their programming more efficient. • Children can create and use strings in programming. • Children can set/change variable values appropriately. • Children know some ways that text variables can be used in coding.
		3D modelling	How can computers be used to help design things in the world?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children know what the 2Design and Make tool is for. • Children can explore the different viewpoints in 2Design and Make whilst designing a building. • Children can adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form. • Children can explore how to edit the polygon 3D models to design a 3D model for a purpose. • Children can refine one of their designs to prepare it for printing. • Children can print their design as a 2D net and then created a 3D model. • Children can explore the possibilities of 3D printing.

		Game creator	How easy is it to make a computer game?	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	We can use and choose different software confidently to undertake projects.	Computer science	• Children can review and analyse a computer game. • Children can describe some of the elements that make a successful game. • Children can begin the process of designing their own game. • Children can design the setting for their game so that it fits with the selected theme. • Children can upload images or use the drawing tools to create the walls, floor, and roof. • Children can design characters for their game. • Children can decide upon, and change, the animations and sounds that the characters make. Children can make their game more unique by selecting the appropriate options to maximise the playability. Children can write informative instructions for their game so that other people can play it. Children can evaluate my their own and peers' games to help improve their design for the future.
		Word processing	How can computers help us to present information?	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 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	We can use and choose different software confidently to undertake projects.	Information technology	• Children can log onto Google docs. • Children can add text to the document. • Children can add appropriate text to their document, formatting in a suitable way. • Children can use styles to format a document. • Children can use bullet points and numbering. • Children know how to add images to a document. • Children know the correct way to search for images that they are permitted to reuse. • Children know how to attribute the original artist of an image. • Children can edit their images within Docs to best present them alongside text. • Children understand wrapping of images and text. • Children can add text boxes and shapes. • Children can use page breaks, headers and footers. • Children can add hyperlinks to places in the document and to an external website. • Children can add an automated contents page. • Children can share their documents with selected users. • Children understand the different permissions when sharing in Google docs. • Children can share using a share link. • Children can create a vector drawing in their document. • Children can add tables to present information.

							Children can create work on Google docs. **(This should be happening every term in mini-advenrtures)**
	Year 6	Online safety	How does our online behaviour impact our everyday life?	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet.	Digital literacy	• Children have used the example game and further research to refresh their memories about risks online including sharing location, secure websites, spoof websites, phishing, and other email scams. • Use the example game to discuss the steps they can take to protect themselves including protecting their digital footprint, where to go for help, smart rules and security software. Get the children to think about why it is important to protect ourselves online and the dangers online can bring to our offline life. • Children understand how what they share impacts upon themselves and upon others in the long-term. Children discuss the impact their words have on people in school and then online. • Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. • Children' actions demonstrate that they also feel a responsibility to others when communicating and sharing content online. • Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time. • Children can talk about the positives and negative aspects of technology and balance these opposing views.
		Spreadsheets	How can we use spreadsheets to maximise the ability to raise money for charity.	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	We can use and choose different software confidently to undertake projects.	Information technology	• **Using Google Docs.** Children can create a spreadsheet to answer a mathematical question relating to probability. • Children can take copy and paste shortcuts. • Children can problem solve using the count tool. • Children can create a machine to help work out the price of different items in a sale. • Children can use a spreadsheet to solve a problem. • Children can use a spreadsheet to model a real-life situation and come up with solutions. (Give them a budget and the children have to spend some and calculate how to best save money.) • Children can make practical use of a spreadsheet to help plan actions.

							• Discuss with the children a real-life event that will help them raise money for school or a charity linked to their mini-adventure. • Children can use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.
		Blogging	What are blogs and why are they used?	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.	We use and understand the benefits, disadvantages and dangers of computer networks including the internet. We can use and choose different software confidently to undertake projects.	Information technology	• Children understand how a blog can be used as an informative text. • Children understand the key features of a blog. • Children work together to plan a class blog to share information. • Children can create a blog or blog post with a specific purpose. • Children understand that the way in which information is presented has an impact upon the audience. • Children can post comments and blog posts to their existing class blog. • Children understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. • Children can assess the effectiveness and impact of a blog. • Children understand that content included in their blog carefully considers the end user.
		Understanding binary	How do computers read data on a computer?	understand computer networks	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children can explain how all data in a computer is saved in the computer memory in a binary format. • Children can explain that binary uses only the integers 0 and 1. • Children can relate 0 to an ‘off’ switch and 1 to and ‘on’ switch. • Children can count up from 0 in binary using visual aids if needed. • Children can relate bits to computer storage. • Children can convert numbers to binary using the division by two method.

							• Children can check their own answers using the converter tool. • Children can make use of a variable set to 0 or 1 to control game states.
		Text adventures	What is a text adventure?	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	We can use and choose different software confidently to undertake projects.	Computer science	• Children can describe what a text adventure is. • Children can map out a story-based text adventure. • Children can use 2Connect to record their ideas. • Children can turn a simple story with 2 or 3 levels of decision making into a logical design. • Children can use the full functionality of 2Create a Story Adventure mode to create, test and debug using their plan. • Children can split their adventure game design into appropriate sections to facilitate creating it. • Children can map out an existing text adventure. • Children can contrast a map-based game with a sequential story-based game. • Children can make a comprehensive design map with a sequence of rooms including rooms in which the player needs to make a choice and collect items in a certain order to complete the game. • Children can create their own text-based adventure based upon a map. • Children can use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code their game. • Children make logical attempts to debug their code when it does not work correctly.
		Coding	How does coding help us create a game based on a text adventure?	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children can plan a program which includes a timer and a score. • Children can follow their plans to create a program. • Children can debug when things do not run as expected. • Children can create a program that makes use of functions. • Children can create a program that uses multiple functions with the code arranged in tabs. • Children can explain how their code executes when their program is run. • Children can follow flowcharts to create and debug code. • Children can create flowcharts for procedures. • Children can be creative with the way they code to generate novel visual effects. • Children can code programs that take text input from the user and use this in the program.

				use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs			• Children can attribute variables to user input. • Children are aware of the need to code for all possibilities when using user input. • Children can follow through the code of how a text adventure can be programmed in 2Code. • Children can design their own text-based adventure game based on one they have played. • Children can adapt an existing text adventure so it reflects their own ideas.
		Networks	How are computer networks developing/	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	We understand the language that a computer uses in order to design, write and debug programmes.	Computer science	• Children know the difference between the World Wide Web and the internet. • Children can provide examples of the difference between the World Wide Web and the Internet. • Children know about their school network. • Children can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN. (**Mr Riley could be invited into class to discuss the school network and how it evolves.)** • Children have researched and found out about Tim Berners-Lee. • Children have considered some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult.
		Quizzing	How can databases be used for quizzes?	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	We can use and choose different software confidently to undertake projects.	Information technology	• Children have used the 2DIY activities to create a picture-based quiz. • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz and responded to feedback. • Children understand the different question types within 2Quiz. • Children have ideas about what sort of questions are best suited to the different question types. • Children have used 2Quiz to make and share a science quiz (or their mini-adventure). • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz with peers. • Children have given and responded to feedback. • Children have tried out the different types of grammar games. • Children have chosen an appropriate tool to make their own grammar game(s). • Children have used a 2Investigate quiz to answer quiz questions.

							• Children have designed their own quiz based on one of the 2Investigate example databases.