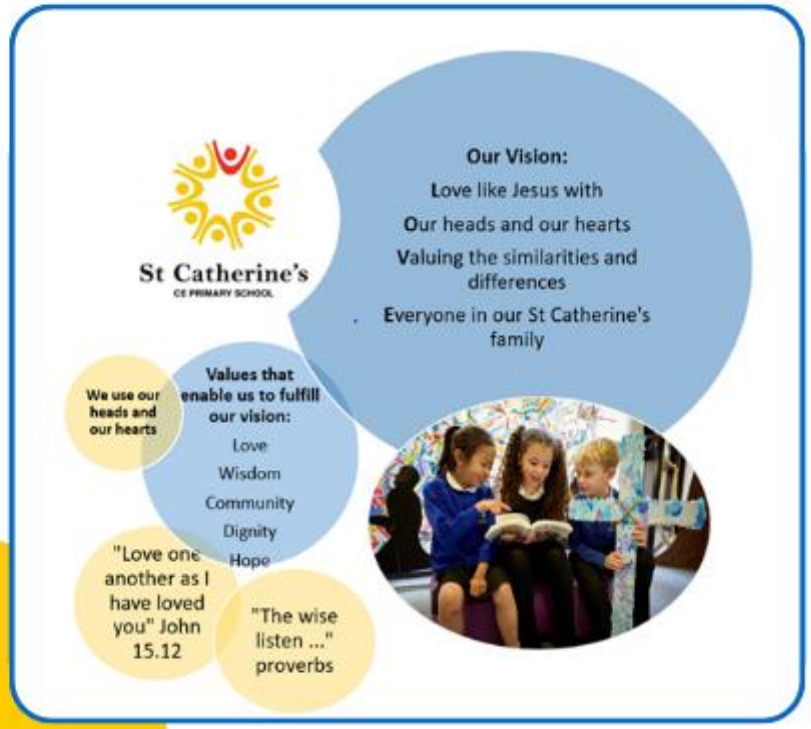
ST CATHERINE'S CE PRIMARY SCHOOL
COMPUTING CURRICULUM OVERVIEW



At St Catherine's, Computing plays a key role in helping children "love like Jesus with their heads and their hearts." Through each lesson, pupils grow in wisdom as they develop essential digital skills, and in love as they learn to collaborate, communicate, and care for others in both real and online spaces. We value and celebrate the unique contributions of every child, encouraging respect, kindness, and curiosity as they explore the world of technology.

Our inclusive curriculum empowers pupils to create, problem-solve, and think critically—building confidence and perseverance as they code, design, and investigate. Working together on projects, children practise teamwork and patience, learning from one another's ideas and supporting each other through challenge. We teach the importance of being responsible digital citizens, helping children to act wisely and safely online, with love and dignity at the heart of their choices.

Through coding clubs and enrichment activities, children are inspired to go further, deepening their understanding and celebrating shared successes. Computing at St Catherine's is a space where all learners can grow in skill, confidence, and compassion—valuing both the similarities and differences that make our learning family strong.

Computing Curriculum at St Catherine's C of E Primary School

At St. Catherine's, we encourage our learners to be digitally literate and to ensure they have the best possible chance of thriving in our ever changing technologically dependent world. Our diverse computing curriculum aims to equip children with the necessary skills to contribute to a rapidly changing world where technology is an ever more pertinent aspect of our everyday lives. We focus on developing the skills necessary for children to be able to use information in an effective way, enabling children to find, explore, analyse, exchange and present information. Computing skills are a major factor in supporting children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve the national curriculum objectives for their key stage.

- At St. Catherine's C of E Primary School, our computing curriculum uses the Purple Mash Computing Curriculum as a foundation for planning and the primary concepts and key areas of the computing national curriculum. Click here to find a breakdown of these key concepts.

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

National Curriculum 2014

The aims of our Computing curriculum are those of the National Curriculum 2014 – all pupils:

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

Key Stage 1 Overview

Pupils should be taught to:

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

Year 1	Year 2
Unit 1.1: Online Safety + Exploring Purple Mash (4 lessons) • To log in safely and understand why that is important. • To create an avatar and to understand what this is and how it is used. • To be able to create a picture and add their own name to it. • To start to understand the idea of 'ownership' of creative work. • To save work to the My Work area and understand that this is private space. • To learn how to find saved work in the Online Work area. • To learn about what the teacher has access to in Purple Mash. • To learn how to see messages left by the teacher on their work. • To learn how to search Purple Mash to find resources. • To become familiar with the types of resources available in the Topics section. • To become more familiar with the icons used in the resources in the Topics section. • To start to add pictures and text to work. • To explore the Tools area of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New. • To explore the Games area on Purple Mash. (extension) • To understand the importance of logging out when they have finished. **Education for a Connected World (2 lessons)**	**Unit 2.2: Online Safety (3 lessons)** • To know how to refine searches using the Search tool. • To know how to share work electronically using the display boards. • To use digital technology to share work on Purple Mash to communicate and connect with others locally. • To have some knowledge and understanding about sharing more globally on the Internet. • To introduce Email as a communication tool using 2Respond simulations. • To understand how we talk to others when they are not there in front of us. • To open and send simple online communications in the form of email. • To understand that information put online leaves a digital footprint or trail. • To begin to think critically about the information they leave online. • To identify the steps that can be taken to keep personal data and hardware secure **Education for a Connected World (2 lessons)**

Unit 1.3: Pictograms (3 lessons)

- To understand that data can be represented in picture format.
- To contribute to a class pictogram.
- To use a pictogram to record the results of an experiment.

Unit 1.4: Lego Builder (3 lessons)

- To emphasise the importance of following instructions.
- To follow and create simple instructions on the computer.
- To consider how the order of instructions affects the result.

Unit 1.5: Maze Explorer (3 lessons)

- To understand the functionality of the basic directions keys in Challenges 1 and 2.
- To be able to use the direction keys to complete the challenges successfully.
- To understand the functionality of the basic direction keys in Challenges 3 and 4.
- To understand how to create and debug a set of instructions (algorithm).
- To use the additional direction keys as part of their algorithm.
- To understand how to change and extend the algorithm list.
- To create a longer algorithm for an activity.
- To provide an opportunity for the children to set challenges for each other.
- To provide an opportunity for the teacher to add these challenges to a display board for the class to try.

Unit 1.8: Spreadsheets (3 lessons)

- To understand what a spreadsheet looks like.
- To be able to navigate around a spreadsheet and enter data.
- To learn new vocabulary related to spreadsheets.
- To add clipart images to a spreadsheet.
- To use the 'move cell' and 'lock' tools.
- To use the 'speak' and 'count' tools in 2Calculate to count items.

Unit 1.6 Animated Story Books (5 lessons)

- To understand the differences between traditional books and ebooks.
- To explore the tools of 2Create a Story's My Simple Story level.
- To save the page they have created.
- To add animation to a picture.
- To play the pages created so far.
- To save the additional changes and overwrite the file.
- To add a sound effect to a picture.
- To add a voice recording to the picture.
- To add created music to the picture.
- To add a background to the story.
- To demonstrate a good understanding of all the tools they have used in 2Create a Story and use these successfully to create their own story.

Unit 2.1 Coding (6 lessons)

- To understand what an algorithm is.
- To create a computer program using an algorithm.
- To create a program using a given design.
- To understand the collision detection event.
- To understand that algorithms follow a sequence.
- To design an algorithm that follows a timed sequence.
- To understand that different objects have different 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.

Unit 2.4 Questioning (5 lessons)

- 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 construct a binary tree to separate different items.
- Use 2Question (a binary tree) to answer questions .
- To use a database to answer more complex search questions.
- To use the Search tool to find information.

Unit 2.3 Spreadsheets (4 lessons)

- To review the work done in 2Calculate in year 1.
- To revise spreadsheet related vocabulary.
- To use some 2Calculate tools that were introduced in year 1.
- To use copying, cutting and pasting shortcuts in 2Calculate.
- To use 2Calcuate totalling tools.
- To use 2Calculate to solve a simple puzzle.
- To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects.
- To add and edit data in a table layout.
- To use the data to manually create a block graph.

- To use the copy and paste feature to create additional pages.
- To continue and complete an animated story.
- To create a class display board of the story books created by the class.

Unit 1.7 Coding (6 lessons)

- To understand what instructions are.
- To predict what will happen when instructions are followed.
- To understand that computer programs work by following instructions called code.
- To use code to make a computer program.
- To understand what objects and actions are.
- To understand what an event is.
- To use an event to control an object.
- To understand what an event is.
- To begin to understand how code executes when a program is run.
- To understand what backgrounds and objects are.
- To understand how to use the scale property.
- To plan a computer program.
- To make a computer program.

Unit 1.9 Technology outside school (2 lessons)

- To find and understand examples of where technology is used in the local community.
- To record examples of technology outside school.

Unit 1.2 Grouping and Sorting (2 lessons)

- To begin to think logically about the steps of a process.
- To sort items using a range of criteria.
- To sort items on the computer using the 'Grouping' activities in Purple Mash.
- To bring together logical thinking and the use of technology.
- To introduce the term 'algorithm' to describe logically following a process.

Unit 2.5 Effective Searching (3 lessons)

- To understand the terminology associated with the Internet and searching.
- To gain a better understanding of searching the Internet.
- To create a leaflet to help someone search for information on the Internet.

Unit 2.6 Creating Pictures (5 lessons)

- To explore 2Paint A Picture.
- To look at the work of Impressionist artists and recreate them using the Impressionism template.
- 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.
- To look at the work of William Morris and recreate it using the Patterns template.
- To look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.

Unit 2.7 Making Music (3 lessons)

- To be introduced to making music digitally using 2Sequence.
- To explore, edit and combine sounds using 2Sequence.
- To add sounds to a tune to improve it.
- To think about how music can be used to express feelings and create tunes which depict feelings.
- To upload a sound from a bank of sounds into the Sounds section.
- To record their own sound and upload it into the Sounds section.
- To create their own tune using the sounds which they have added to the Sounds section.

Unit 2.8 Presenting Ideas (4 lessons)

- To explore how a story can be presented in different ways.
- To make a quiz about a story or class topic.
- To make a fact file on a non-fiction topic.
- To make a presentation to the class.

Key Stage 2 Overview

Pupils should continue to:

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

Year 3	Year 4	Year 5	Year 6
Unit 3.2 Online Safety (3 lessons) ● To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. ● To understand how the Internet can be used to help us to communicate effectively. ● To understand how a blog can be used to help us communicate with a wider audience. ● To consider if what can be read on websites is always true. ● To look at a 'spoof' website. ● To create a 'spoof' webpage. ● To think about why these sites might exist and how to check that the information is accurate. ● To learn about the meaning of age restrictions symbols on digital media and devices. ● To discuss why PEGI restrictions exist. ● To know where to turn for help if they see inappropriate content or have inappropriate contact from others. **Education for a Connected World (2 lessons)**	**Unit 4.2 Online Safety (4 lessons)** ● To understand how children can protect themselves from online identity theft. ● To understand that information put online leaves a digital footprint or trail and that this can aid identity theft. ● To identify the risks and benefits of installing software including apps. ● To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. ● To identify appropriate behaviour when participating or contributing to collaborative online projects for learning. ● To identify the positive and negative influences of technology on health and the environment. ● To understand the importance of balancing game and screen time with other parts of their lives. **Education for a Connected World (2 lessons)**	**Unit 5.2 Online Safety (3 lessons)** ● To gain a greater understanding of the impact that sharing digital content can have. ● To review sources of support when using technology. ● To review children' responsibility to one another in their online behaviour. ● To know how to maintain secure passwords. ● To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. ● To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. ● To learn about how to reference sources in their work. ● To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. ● Ensuring reliability through using different methods of communication. **Education for a Connected World (2 lessons)**	**Unit 6.2 Online Safety (2 lessons)** ● To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location. ● To identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon. ● To identify the benefits and risks of giving personal information and device access to different software. ● To review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user. ● To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. ● To begin to understand how information online can persist and give away details of those who share or modify it. ● To understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health.

			• To identify the positive and negative influences of technology on health and the environment. **Unit 6.6 Networks (3 lessons)** • To discover what the children know about the Internet. • To find out what a LAN and WAN are. • To find out how we access the internet in school. • To research and find out about the age of the internet. • To think about what the future might hold **Education for a Connected World (2 lessons)**
Unit 3.3 Spreadsheets (3 lessons) • To add and edit data in a table layout. • To find out how spreadsheet programs can automatically create graphs from data. • To introduce the 'more than', 'less than' and 'equals' tools. • To introduce the 'spin' tool and show how it can be used to count through times tables. • To introduce the Advanced mode of 2Calculate. • To learn about describing cells using their addresses. **Unit 3.4 Touch Typing (4 lessons)** • To introduce typing terminology. • To understand the correct way to sit at the keyboard. • To learn how to use the home, top and bottom row keys. • To practice and improve typing for home, bottom, and top rows. • To practice the keys typed with the left hand. • To practice the keys typed with the right hand.	**Unit 4.1 Coding (6 lessons)** • To review coding vocabulary and knowledge. • To create a simple computer program. • To begin to understand selection in computer programming. • To understand how an IF statement works. • To understand how to use coordinates in computer programming. • To understand how an IF statement works. • To understand the Repeat until command. • To begin to understand selection in computer programming. • To understand how an IF/ELSE statement works. • To understand what a variable is in programming. • To use a number variable. • To review vocabulary and concepts learnt in Year 4 Coding. • To create a playable game. **Unit 4.8 Hardware Investigators (2 lessons)** • To understand the different parts that make up a desktop computer.	**Unit 5.1 Coding (6 lessons)** • To review existing coding knowledge. • To begin to be able to simplify code. • To create a playable game. • To understand what a simulation is. • To program a simulation using 2Code. • To know what decomposition and abstraction are in Computer Science. • To take a real-life situation, decompose it and think about the level of abstraction. • To use decomposition to make a plan of a real-life situation. • To understand how to use friction in code. • To begin to understand what a function is and how functions work in code. • To understand what the different variable types are and how they are used differently. • To understand how to create a string. • To begin to explore text variables when coding. • To understand what concatenation is and how it works. **Unit 5.9 External Devices (6 lessons)** • To understand what Purple Chip is. • To be able to upload a program to an external device.	**Unit 6.1 Coding (6 lessons)** • To design a playable game with a timer and a score. • To plan and use selection and variables. • To understand how the launch command works. • To use functions and understand why they are useful. • To understand how functions are created and called. • To use flowcharts to test and debug a program. • To create a simulation of a room in which devices can be controlled. • To understand the different options of generating user input in 2Code. • To understand how user input can be used in a program. • To understand how 2Code can be used to make a text-based adventure game.

	• To recall the different parts that make up a computer.	• To adapt a program and operate it using Purple Chip. • To understand how a device can be programmed to be used as a game controller. • To explore the text functions available and appraise their uses. • To create a simple quiz program that can be answered using an external device. • To create a program in which an external device can be used to monitor real world conditions.	
Unit 3.1 Coding (6 lessons) • To review previous coding knowledge. • To understand what a flowchart is and how flowcharts are used in computer programming. • To understand that there are different types of timers. • To be able to select the right type of timer for a purpose. • To understand how to use the repeat command. • To use coding knowledge to create a range of programs. • To understand the importance of nesting. • To design and create an interactive scene.	**Unit 4.3 Spreadsheets (6 lessons)** • To explore how the numbers entered into cells can be set to either currency or decimal. • To explore the use of the display of decimal places. • To find out how to add formulae to a cell. • To explore how tools can be combined to use 2Calculate to make number games. • To explore the use of the timer, random number and spin button tools. • To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings. • To use the currency formatting tool in 2Calculate. • To use 2Calculate to create a model of a real-life situation. • To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.	**Unit 5.3 Spreadsheets (6 lessons)** • To use formulae within a spreadsheet to convert measurements of length and distance. • To use the count tool to answer hypotheses about common letters in use. • To use a spreadsheet to model a real-life problem. • To use formulae to calculate area and perimeter of shapes. • To create formulae that use text variables. • To use a spreadsheet to help plan a school cake sale.	**Unit 6.5 Text Adventures (5 lessons)** • To find out what a text-based adventure game is and to explore an example made in 2Create a Story. • To use 2Connect to plan a 'Choose your own Adventure' type story. • To use 2Connect plans for a story adventure to make the adventure using 2Create a Story. • To read and understand given code for a text adventure game. • To debug a text adventure. • To independently design and implement improvements to a text adventure game.

Unit 3.5 Email (6 lessons) ● To think about the different methods of communication. ● To open and respond to an email. ● To write an email to someone from an address book. ● To learn how to use email safely. ● To add an attachment to an email. ● To explore a simulated email scenario.	**Unit 4.4 Writing for different audiences (5 lessons)** ● To explore how font size and style can affect the impact of a text ● To use a simulated scenario to produce a news report. ● To use a simulated scenario to write for a community campaign.	**Unit 5.5 Game Creator (5 lessons)** ● To Introduce the 2DIY 3D tool. ● To begin planning a game. ● To design the game environment. ● To design the game quest to make it a playable game. ● To finish and share the game. ● To self- and peer evaluate.	**Unit 6.7 Quizzing (6 lessons)** ● To create a picture-based quiz for young children. ● To learn how to use the question types within 2Quiz. ● To explore the grammar quizzes. ● To make a quiz that requires the player to search a database. ● To make a quiz to test your teachers or parents.
Unit 3.6 Branching Databases (4 lessons) ● To sort objects using just YES/NO questions. ● To complete a branching database using 2Question. ● To create a branching database of the children's choice. **Unit 3.7 Simulations (3 lessons)** ● To find out what a simulation is and understand the purpose of simulations. ● To explore a simulation, making choices and discussing their effects. ● To work through and evaluate a more complex simulation.	**Unit 4.5 Logo (4 lessons)** ● To learn the structure of the language of 2Logo. ● To input simple instructions in 2Logo. ● To use 2Logo to create letter shapes. ● To use the Repeat command in 2Logo to create shapes. ● To use and build procedures in 2Logo. **Unit 4.6 Animation (3 lessons)** ● To decide what makes a good, animated film or cartoon and discuss favourite animations. ● To learn how animations are created by hand. ● To find out how 2Animate animations can be created in a similar way using technology. ● To learn about onion skinning in animation. ● To add backgrounds and sounds to animations. ● Introducing 'stop motion' animation. ● To share animation with the class blog.	**Unit 5.4 Databases (4 lessons)** ● To learn how to search for information in a database. ● To contribute to a class database. ● To create a database around a chosen topic. **Unit 5.7 Concept Maps (4 lessons)** ● To understand the need for visual representation when generating and discussing complex ideas. ● To understand the uses of a 'concept map'. ● To understand and use the correct vocabulary when creating a concept map. ● To create a concept map. ● To understand how a concept map can be used to retell stories and information. ● To create a collaborative concept map and present this to an audience.	**Unit 6.8 Understanding Binary (4 lessons)** ● To examine how whole numbers are used as the basis for representing all types of data in digital systems. ● To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). ● To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics. ● To examine how whole numbers are used as the basis for representing all types of data in digital systems. ● To recognise that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11 ● To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. ● To examine how whole numbers are used as the basis for representing all types of data in digital systems. ● To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. ● To explore how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms. ● To examine how whole numbers are used as the basis for representing all types of data in digital systems. ● To represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0

			Unit 6.4 Blogging (4 lessons) ● To identify the purpose of writing a blog. ● To identify the features of successful blog writing. ● To plan the theme and content for a blog. ● To understand how to write a blog and a blog post. ● To consider the effect upon the audience of changing the visual properties of the blog. ● To understand how to contribute to an existing blog. ● To understand the importance of commenting on blogs. ● To peer-assess blogs against the agreed success criteria. ● To understand how and why blog posts and comments are approved by the teacher.
Unit 3.9 Presenting (5 lessons) ● To create a page in a presentation. ● To add media to a presentation. ● To add animations into a presentation. ● To add timings into a presentation. ● To use the skills learnt in previous weeks to design and present an effective presentation. **Unit 3.8 Graphing (2 lessons)** ● To enter data into a graph and answer questions. ● To investigate in order to answer a question. ● To present the results in graphic form.	**Unit 4.9 Making Music (4 lessons)** ● To identify and discuss the main elements of music: Pulse, Rhythm, Tempo, Pitch, Texture ● To understand and experiment with rhythm and tempo. ● To create a melodic phrase. ● To compose a piece of electronic music. **Unit 4.7 Effective Searching (3 lessons)** ● To locate information on the search results page. ● To use search effectively to find out information. ● To assess whether an information source is true and reliable.	**Unit 5.8 Word Processing (8 lessons)** ● To know what a word processing tool is for. ● To add and edit images to a word document. ● To know how to use word wrap with images and text. ● To change the look of text within a document. ● To add features to a document to enhance its look and usability. ● To use tables within MS Word to present information. ● To introduce children to templates. ● To consider page layout including heading and columns. **Unit 5.6 3D Modelling (4 lessons)** ● To be introduced to the 2Design and Make tool. ● To explore the effect of moving points when designing. ● To design a 3D model to fit certain criteria. ● To refine and print a model. **See Teach Computing for extra resources on 3D modelling.**	**Unit 6.9 Spreadsheets (8 lessons)** ● To know what a spreadsheet looks like. ● To navigate and enter data into cells. ● To introduce some basic data formulae in Excel. ● To demonstrate how the use of Excel can save time and effort when performing calculations. ● To use a spreadsheet to model a situation. ● To demonstrate how Excel can make complex data clear by manipulating the way it is presented. ● To use formulae for percentages, averages, max and min in spreadsheets. ● To create a variety of graphs in Excel. ● To use a spreadsheet to model a real-life situation. ● To apply spreadsheet skills to solving problems.

Our Intention is to ensure that the children at our school:

- **Enjoy it**
- **Believe they can do it**
- **See the purpose in it**
- **Do it confidently**
- **Can do it now, tomorrow and forever**

Every subject, every cross- curricular theme, every aspect of our work is an ‘it’!
Every child has at least one ‘it’ – we need to find it!