St. Luke's C of E (Aided) Primary School

Computing Information 2023-2024

SEPTEMBER 2023

Overview

The teaching of Computing provides valuable life skills and prepares the children with the skills and knowledge needed for future careers. It develops problems solving, logical thinking and creativity.

Intent

Our teaching of Computing includes the aspects of Computer Science, Information Technology and Digital Literacy. We have a strong emphasis on online safety, which we cover at the start of each year, on Internet Safety Day and at other times, linked to the children's learning. We enable children to use a variety of software to communicate, solve problems, collect and present data and to create programs and animations.

Implementation

We teach Computing as a discrete subject in order to develop skills and knowledge, though other subjects may use technology to enhance learning. We use Purplemash, an online platform, which provides the software needed and provides a progression in the skills and knowledge developed by the children. The children are able to access this at home and at school. Teachers have up to date knowledge of the curriculum and of the software. Teachers differentiate to support or challenge the children as appropriate. Children are given written or verbal feedback on their work.

Impact

At St. Luke's teachers regularly assess children and upload data onto our assessment programme 'Depth of Learning'. Clear progress is demonstrated across the year groups using this system. We aim to ensure that children progress through year groups feeling ready to develop and build on their knowledge and skills. We check on the progress of the children through analysis of their work and provide verbal and written feedback to the children to enable them to progress.

Computing Curriculum Coverage by Year Group

Year 1

Key Skills and Knowledge Overview:

- To know that an algorithm is a set of instructions used to solve a problem or achieve an objective.
- To know that a computer program turns an algorithm into code that the computer can understand
- To know what is wrong with a simple algorithm when the steps are out of order and can make logical steps to fix the code.
- To know how to read the code and predict the overall effect of the program.
- To know the risks of being online.

To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures.
To know how to begin to use simple databases to collect and store information in areas across the curriculum.

Computing Knowledge	Vocabulary
Internet Safety - Autumn Term 1 Lesson 1: Safe Logins To know the risks of being online. To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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. Lesson 2: My work area To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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.	Login password private home screen work area avatar icon typing saving log out alert notification communication device search filter shared folders filename

Lesson 3: Purplemash topics To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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. Lesson 4: Purplemash tools To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. 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.	Topic Area writing template textbox toolbar menu think about box Purple Mash Tools button
1.7 Coding with 2Code - Autumn Term 2 Lesson 1: Instructions To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To know that a computer program turns an algorithm into code that the computer can understand. 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. Lesson 2: Objects and Actions To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To know that a computer program turns an algorithm into code that the computer can understand. To use code to make a computer program. To understand what objects and actions are. Lesson 3: Events To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To know that a computer program turns an algorithm into code that the computer can understand. To understand what an event is. To use an event to control an object. Lesson 4: When Code executes To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To know that a computer program turns an algorithm into code that the computer can understand. To understand what an event is. To begin to understand how code executes when a program is run. Lesson 5: Setting the scene To know what is wrong with a simple algorithm when the steps are out of order and can make logical steps to fix the code. To know how to read the code and predict the overall effect of the program. To understand what backgrounds and objects are. To understand how to use the scale attribute (property).	action Algorithm Background Code Command Debug Event Execute Input Instructions Object Properties Output Run Sound Scale Scene When clicked Direction Challenge Arrows Undo Rewind Forward Backward Right turn Left turn

Lesson 6: Using a plan To know what is wrong with a simple algorithm when the steps are out of order and can make logical steps to fix the code. To know how to read the code and predict the overall effect of the program. To plan a computer program. To make a computer program.	
Spring 1 – 1.4 Lego Builders 1.5 Maze Explorers using 2Go Internet safety day Lesson 1: Following and creating simple instructions on the computer (lesson 2 on purplemash) To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To follow and create simple instructions on the computer. Lesson 2: To consider how the order of the instructions affects the result. To know that an algorithm is a set of instructions used to solve a problem or achieve an objective. To know that a computer program turns an algorithm into code that the computer can understand. To consider how the order of instructions affects the result. Lesson 3: Challenges 1 and 2 To know how to read the code and predict the overall effect of the program. To understand the functionality of the basic direction keys in Challenges 1 and 2. To be able to use the direction keys to complete the challenges successfully. Lesson 4: Challenges 3 and 4 To know what is wrong with a simple algorithm when the steps are out of order and can make logical steps to fix the code. 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). Lesson 5: Challenges 5 and 6 To know how to read the code and predict the overall effect of the program. 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 Lesson 6: Internet Safety Day To know the risks of being online.	Direction Challenge Arrows Undo Rewind Forward Backward Right turn Left turn
Spring 2 - 1.3 Pictograms using 2Count 1.9 Technology outside school Lesson 1: Data in Pictures To know how to begin to use simple databases to collect and store information in areas across the curriculum. To understand that data can be represented in picture format. Lesson 2: Class Pictogram To know how to begin to use simple databases to collect and store information in areas across the curriculum.	Pictogram Data Collate Sort Criteria Arrow keys technology

To contribute to a class pictogram. Lesson 3: Recording results To know how to begin to use simple databases to collect and store information in areas across the curriculum. To use a pictogram to record the results of an experiment. Lesson 4: What is technology? To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. To find and understand examples of where technology is used in the local community Lesson 5: Technology outside of school To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. To record examples of technology outside school.	
Summer 1 - 1.2 Grouping and Sorting 1.8 Spreadsheets using 2Calculate Lesson 1: Sorting away from the computer To know how to begin to use simple databases to collect and store information in areas across the curriculum. To sort items using a range of criteria. Lesson 2: Sorting on the computer To know how to begin to use simple databases to collect and store information in areas across the curriculum. To sort items on the computer using the 'Grouping' activities in Purple Mash. Lesson 3: Introduction to spreadsheets To know how to begin to use simple databases to collect and store information in areas across the curriculum. To understand what a spreadsheet looks like. To be able to navigate around a spread sheet and enter data. To learn new vocabulary related to spreadsheets. Lesson 4: Adding images to a spreadsheet and using the image toolbox To know how to begin to use simple databases to collect and store information in areas across the curriculum. To add clipart images to a spreadsheet. To use the 'move cell' and 'lock' tools Lesson 5: Using the speak and count tools in 2Calculate to count items. To know how to begin to use simple databases to collect and store information in areas across the curriculum. To use the 'speak' and 'count' tools in 2Calculate to count items.	Data Collate Sort Criteria Arrow keys Cursor Backspace Columns Cells Clipart Count tool Delete key Image toolbox Lock tool Move cell tool Speak tool Spreadsheet rows
Summer 2 - 1.6 Animated storybooks using 2Create a story Lesson 1: Drawing and creating To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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 Lesson 2: Animation To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures.	animation Font Ebook File Sound effect displayboard

To add animation to a picture. To play the pages created so far. To save the additional changes and overwrite the file. Lesson 3: Sounds and more! To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. To add a sound effect to a picture. To add a voice recording to the picture. To add created music to the picture. Lesson 4: Making a story To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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. Lesson 5: Copy and paste To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. 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. Lesson 6: Finishing off and sharing To know how to use a simple range of applications and devices in order to communicate ideas, work and messages through text, sounds and pictures. To continue and complete an animated story. To create a class display board of the story books created by the class. To share their stories with another class or with each other.	

Year 2

Key Skills and Knowledge Overview:

- To know that an algorithm is a set of instructions to complete a task.
- To know that their own algorithms must be precise.
- To know how to create a simple program that achieves a specific purpose. To know how to identify and correct some errors.
- To know how to identify the parts of a program that respond to specific events and initiate specific actions
- To know how to participate in class social media accounts.
- To know the online risks and the age rules for sites.

To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways.
To know how to use simple databases to collect, store and retrieve information in areas across the curriculum.

Computing Knowledge	Vocabulary

Internet Safety and Effective Searching - Autumn Term 1 Lesson 1: Searching and Sharing To know how to participate in class social media accounts. To know the online risks and the age rules for sites. 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. Lesson 2: Email using 2Respond To know how to participate in class social media accounts. To know the online risks and the age rules for sites. 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. Lesson 3: Digital footprint To know the online risks and the age rules for sites. 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. Lesson 4: Understanding the Internet and Searching To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To understand the terminology associated with the Internet and searching. Lesson 5: Searching the Internet To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To know the online risks and the age rules for sites. To gain a better understanding of searching the Internet Lesson 6: Searching the internet To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To know the online risks and the age rules for sites. To create a leaflet to help someone search for information on the Internet.	search filter internet sharing display board email attachment reply personal information private information digital footprint protection identifying secure Internet World Wide Web network device web page browser website domain web address URL search engine Digital Footprint

2.1 Coding using 2code- Autumn Term 2 Lesson 1: Algorithms To know that an algorithm is a set of instructions to complete a task. To understand what an algorithm is. To create a computer program using an algorithm. Lesson 2: Collision detection To know that an algorithm is a set of instructions to complete a task. To create a program using a given design. To understand the collision detection event. Lesson 3: Using a timer To know that an algorithm is a set of instructions to complete a task. To know that their own algorithms must be precise. To understand that algorithms follow a sequence. To design an algorithm that follows a timed sequence. Lesson 4: Different object types To know how to identify the parts of a program that respond to specific events and initiate specific actions To understand that different objects have different attributes (properties). To understand what different events do in code. Lesson 5: Buttons To know how to identify the parts of a program that respond to specific events and initiate specific actions To know that their own algorithms must be precise. To create a program using a given design. To understand the function of buttons in a program. Lesson 6: Smelly code debugging To know how to create a simple program that achieves a specific purpose. To know how to identify and correct some errors. To know that their own algorithms must be precise. To know what debugging means. To understand the need to test and debug a program repeatedly. To debug simple programs.	collision detection Action Algorithm Background Code Command Debug Event Design mode Key pressed Nesting Input Instructions Object Properties Predict Run Sound Scale Scene When clicked/swiped Sequence Test Timer text

Spring 1 - 2.3 Spreadsheets using 2Calculate Internet safety day Lesson 1: Reviewing prior use of spreadsheets To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. 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. Lesson 2: Copying and pasting totalling tools To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To use copying, cutting and pasting shortcuts in 2Calculate. To use 2Calcuate totalling tools. To use 2Calculate to solve a simple puzzle Lesson 3: Using a spreadsheet to add amounts. To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects Lesson 4: Creating a table and a block graph To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To add and edit data in a table layout. To use the data to manually create a block graph. Lesson 5: Internet Safety Day To know the online risks and the age rules for sites.	database Data Collate Sort Criteria Arrow keys Cursor Backspace Columns Cells Clipart Count tool Delete key Image toolbox Copy and paste Count tool Equals tool
Spring 2 - 2.7 Making Music and using Paint Lesson 1: Introducing 2sequence To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To be introduced to making music digitally using 2Sequence. To explore, edit and combine sounds using 2Sequence. Lesson 2: Making music To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. 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. Lesson 3: Soundtracks To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways.	impressionism Pallete Pointillism Share Surrealism

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. Lesson 4: 2Paint recap To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To recap the features of 2Paint and create a picture linked to topic work. Lesson 5: Developing skills To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To create a picture based on an artist's design.	
Summer 1 - 2.4 Questioning using 2Question and 2Investigate Lesson 1: Using and creating pictograms To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To show that the information provided on pictograms is of limited use beyond answering simple questions Lesson 2: Asking yes or no questions To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To use yes/no questions to separate information Lesson 3: Binary trees To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To construct a binary tree to separate different items. Lesson 4: Using 2Question To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. Use 2Question (a binary tree) to answer questions Lesson 5: Using 2Investigate To know how to use simple databases to collect, store and retrieve information in areas across the curriculum. To use a database to answer more complex search questions. To use the Search tool to find information.	Pictogram Binary tree Avatar database Data Collate Sort Criteria

Summer 2 - 2.8 Presenting Ideas and using 2Publish to present work Lesson 1: Presenting a story 3 ways To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To explore how a story can be presented in different ways. Lesson 2: Presenting ideas as a quiz To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To make a quiz about a story or class topic. Lesson 3: Making a non-fiction fact-file To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To make a fact file on a non-fiction topic. Lesson 4: Making a presentation To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To make a presentation to the class Lesson 5: Presenting work To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To present work relating to topic work. Lesson 6: Presenting work To know how to use a range of applications and devices in order to communicate ideas, work and messages in different ways. To present work relating to topic work.	Quiz Presentation Node Animated Non-fiction Narrative audience

Year 3

Key Skills and Knowledge Overview:

- To know how to turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts.
- To know how to design and code a program that follows a simple sequence and experiment with timers to achieve repetition effects in their programs.
- To know the difference in the effect of using a timer command rather than a repeat command when creating repetition effects
- To know how to design a program showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures.
- To know the risks posed by online communications.
- To know that comments made online that are hurtful or offensive are the same as bullying.
- To know how to contribute to blogs that are moderated by teachers.
- To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email.
- To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum.

Computing Knowledge	Vocabulary
Internet Safety and Word - Autumn Term 1 Lesson 1: Safety in Numbers To know how to contribute to blogs that are moderated by teachers. To know the risks posed by online communications. 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 Lesson 2: Fact or Fiction? To know the risks posed by online communications. 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. Lesson 3: Appropriate content and ratings To know the risks posed by online communications. 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 Lesson 4: Text colour, font and size To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To change the text colour, font and size. Lesson 5: Inserting pictures To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To use clipart. To resize and move images. Lesson 6: Inserting WordArt. To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To use Word art.	password personal information blog permission vlogs appropriate Internet website spoof verify reputable source Inappropriate Permission Text formatting Word Word art Size Font Resize New document

3.1 Coding using 2code- Autumn Term 2 Lesson 1: Using Flowcharts To know how to design a program showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. To review previous coding knowledge. To understand what a flowchart is and how flowcharts are used in computer programming. Lesson 2: Using Timers To know the difference in the effect of using a timer command rather than a repeat command when creating repetition effects To understand that there are different types of timers. To be able to select the right type of timer for a purpose. Lesson 3: Using repeat To know how to design and code a program that follows a simple sequence and experiment with timers to achieve repetition effects in their programs. To know the difference in the effect of using a timer command rather than a repeat command when creating repetition effects To understand how to use the repeat command. Lesson 4: Code, test and debug To know how to design a program showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. To use coding knowledge to create a range of programs. To understand the importance of nesting. Lesson 5: Design and make an interactive scene. To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To design and create an interactive scene. Lesson 6: Design and make an interactive scene. To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To design and create an interactive scene.	Collision detection Action Algorithm Alert Blocks of command Button Background Code Command Debug Develop Execute flowchart Event Design mode Key pressed Nesting Input Instructions Object output Properties plan Predict Run repeat Sound sequence

Spring 1 - 3.5 Email and email safety using 2email Internet safety day Lesson 1: Communication To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To think about the different methods of communication. Lesson 2: Composing emails To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To open and respond to an email. To write an email to someone from an address book. Lesson 3: Using email safely: Part one To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To learn how to use email safely. Lesson 4: Using email safely: Part two To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To learn how to use email safely. Lesson 5: To add an attachment to an email To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To add an attachment to an email. Lesson 6: Internet Safety Day To know the risks posed by online communications.	Communication Email Send Cc Attachment Formatting Report to teacher Address book Save to draft
Spring 2 - 3.8 Graphing using 2Graph 3.7 Simulations using 2simulate Lesson 1: Introducing 2graph To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To set up a graph. Lesson 2: Using 2graph to solve an investigation	Graph Field Data Bar chart Block graph Line graph simulation

To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To present data in graphical forms. To solve a maths investigation. Lesson 3: What are simulations To know how to turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. To find out what a simulation is and understand the purpose of simulations. Lesson 4: Exploring a simulation To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To explore a simulation, making choices and discussing their effects. Lesson 5: Analysing and evaluating a simulation To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To work through and evaluate a more complex simulation	
Summer 1 - 3.3 Spreadsheets using 2Calculate 3.4 Touch Typing using 2Type Lesson 1: Creating pie charts and bar graphs To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To add and edit data in a table layout. To find out how spreadsheet programs can automatically create graphs from data. Lesson 2: Using more than and spin button tools To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. 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. Lesson 3: Advanced mode and cell addresses To know how to begin to devise and construct databases to analyse, evaluate and present data using applications designed for this purpose in areas across the curriculum. To introduce the Advanced mode of 2Calculate. To learn about describing cells using their addresses.	≥ = ≤ Advance mode Copy and paste Columns Rows Cells Delete key Equals tool Spin tool Move cell tool Spreadsheet

Lesson 4: Home, top and bottom row keys To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. 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 Lesson 5: Home, top and bottom row keys To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To practice and improve typing for home, bottom, and top rows. Lesson 6: Left keys To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To practice the keys typed with the left hand.	
Summer 2 - 3.9 Presenting using PowerPoint Lesson 1: Making a presentation from a blank page. To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To create a page in a presentation. Lesson 2: Adding media To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To add media to a presentation Lesson 3: Adding animations To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To add animations into a presentation Lesson 4: Presenting with timings To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To add timings into a presentation	PowerPoint Animation Slides Transition Clipart Text box Font Media Audio Presentation Slideshow Stock image Design templates Text formatting Word Word art Size Resize New document

Lesson 5 and 6: Create a presentation To begin to know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, such as touch typing and use of email. To use the skills learnt in previous weeks to design and present an effective presentation.	

Year 4

Key Skills and Knowledge Overview:

• • To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition.
• To know how to make more intuitive attempts to debug their own programs.
• To know how to use timers to achieve repetition effects.
• To know how to use 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs.
• To know how variables can be used to store information while a program is executing and use and manipulate the value of variables.
• To know how to make use of user inputs and outputs such as 'print to screen'.
• To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures.
• To know how to trace code and use step-through methods to identify errors in code and make logical attempts to correct this.
• To know the risks posed by online communications and know some ways to minimise those risks.
• To know and understand the term 'copyright'.
• To know that comments made online that are hurtful or offensive are the same as bullying.
• To know how online services work.
• To know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, using Publisher.
• To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback.

Computing Knowledge	Vocabulary
Internet Safety - Autumn Term 1 Lesson 1: Going Phishing To know the risks posed by online communications and know some ways to minimise those risks. 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. Lesson 2: Beware Malware To know the risks posed by online communications and know some ways to minimise those risks.	report SMART rules Spam attachment phishing digital footprint malware software virus

To identify the risks and benefits of installing software including apps. Lesson 3: Plagarism To know and understand the term 'copyright' To know the risks posed by online communications and know some ways to minimise those risks. 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 Lesson 4: Healthy Screen time To know the risks posed by online communications and know some ways to minimise those risks. 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 Lesson 5: Cyberbullying To know that comments made online that are hurtful or offensive are the same as bullying. I can identify how a message can hurt someone's feelings. I can say how I should respond to a hurtful message online. Lesson 6: Searching the Internet To know how online services work. I can use a search engine accurately.	AdFly ransomware cookies plagiarism watermark citation copyright collaborating data analysis collaborative database
4.1 Coding using 2code- Autumn Term 2 Lesson 1: Design, code, test, debug To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. To know how to make more intuitive attempts to debug their own programs. To review coding vocabulary and knowledge. To create a simple computer program. Lesson 2: IF statements To know how to use 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. To know how to use timers to achieve repetition effects. To begin to understand selection in computer programming. To understand how an IF statement works Lesson 3: Co-ordinates	Action Alert Background Blocks of command Button Code block Command Co -ordinates Debug Design mode Develop Event Execute flowchart If/if else Instructions Key pressed Nesting Number variable Object types plan Predict Prompt for input Properties Repeat Repeat until Run

To know how to use 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. To know how to use timers to achieve repetition effects. To understand how to use coordinates in computer programming. To understand how an IF statement works. Lesson 4: Repeat/until and IF/ELSE statements To know how to use 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. To know how to make use of user inputs and outputs such as 'print to screen'. To understand the Repeat until command. To begin to understand selection in computer programming. To understand how an IF/ELSE statement works. Lesson 5: Number variables To know how variables can be used to store information while a program is executing and use and manipulate the value of variables. To understand what a variable is in programming. To use a number variable. Lesson 6: Making a playable game To know how to trace code and use step-through methods to identify errors in code and make logical attempts to correct this. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. To know how to make more intuitive attempts to debug their own programs. To review vocabulary and concepts learnt in Year 4 Coding. To create a playable game	
Spring 1 - 4.7 Effective searching Internet safety day Lesson 1: Using a search engine To know how online services work. To locate information on the search results page. Lesson 2: Use search effectively to answer questions To know how online services work. To use search effectively to find out information. To use search effectively to find out information. Lesson 3: Reliable information sources To know how online services work.	Internet Internet browser Search Website Search engine Spoof website

To assess whether an information source is true and reliable. Lesson 4 and 5: Topic research To know how to use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally, using Publisher. To know how online services work. To research the topic. To present work using their choice of software. Lesson 6: Internet safety day To know the risks posed by online communications and know some ways to minimise those risks.	
Spring 2 - 4.5 Logo using 2Logo Lesson 1: Introduction to Logo To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures To learn the structure of the language of 2Logo. To input simple instructions in 2Logo Lesson 2: Creating letters using Logo. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures To use 2Logo to create letter shapes. Lesson 3: Using the repeat command in 2Logo To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures To use the Repeat command in 2Logo to create shapes. Lesson 4: Using procedures To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures To use and build procedures in 2Logo.	Logo BK FD LT RT REPEAT SETPC (set pen colour) SETPT (set pen thickness) PU (pen up) PD (pen down)
Summer 1 - 4.3 Spreadsheets using 2Calculate Lesson 1: Formula wizard and formatting cells	Average advance mode Copy and past columns Cells Chart Equals tool Formula Formula

To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. 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. Lesson 2: Using the timer and spin buttons To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. 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 Lesson 3: Co-ordinates To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. To understand how to use coordinates in computer programming. To understand how an IF statement works. Lesson 4: Line graphs To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. To use the line graphing tool in 2Calculate with appropriate data. To interpret a line graph to estimate values between data readings. Lesson 5: Using a spreadsheet for budgeting To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. To use the currency formatting tool in 2Calculate. To use 2Calculate to create a model of a real-life situation. Lesson 6: Using a spreadsheet for topic work To know how to devise and construct databases using applications designed for this purpose in areas across the curriculum and make improvements based on feedback. To create a spreadsheet linked to some topic or maths work.	wizard Move cell tool Random tool Rows Spin tool Spreadsheet timer
Summer 2 – Kodu Lesson 1: Creating a Kodu To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition.	Terrain Character Object tool Tile When blocks Do blocks Path tool Ground brush Hills and valleys Delete tool Water tool Roughen flatten

To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. To create an onscreen character and programme it to move. Lesson 2: Create a racing track To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. I can insert objects into the environment I can use pathways and create roads, Lesson 3: Create a maze game To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. I can use the terrain tools to create an interesting game environment Lesson 4: Planning a game To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. I can design and write a program to achieve certain goals Lesson 5 and 6: Making and evaluating a game To know how to turn a real-life situation into an algorithm, showing that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. To know how to design programs showing that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. To know how to make more intuitive attempts to debug their own programs. To know how to trace code and use step-through methods to identify errors in code and make logical attempts to correct this. I can design and write a program to achieve certain goals I can detect and correct errors in programs	

Year 5

Key Skills and Knowledge Overview:

- To know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts.
- To know how to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.
- To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
- To know how to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables
- To know and understand the effect of online comments and show responsibility and sensitivity when online.
- To know the risks of online communities and demonstrate more knowledge of how to minimise risk.

To know how to use many of the advanced features in order to create high quality communications.
To know how to use applications to devise, construct and manipulate data.

Computing Knowledge	Vocabulary
Internet Safety - Autumn Term 1 Lesson 1: Personal Details To know the risks of online communities and know how to minimise risk and report problems. To know the effect of online comments and show responsibility and sensitivity when online. Lesson 2: Who is it? To know the risks of online communities and know how to minimise risk and report problems. To know the effect of online comments and show responsibility and sensitivity when online. Lesson 3: Phishing To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 4: Strong Passwords To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 5: Online bullying To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 6: Reporting To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	Digital footprint Social media Internet privacy Personal information Phishing Spearphishing URL Spam Pop-ups Terms and conditions Upstander Online bullying
5.1 Coding using 2code - Autumn Term 1 Lesson 1: Coding Efficiently	Action Abstraction algorithm Button Called Co -ordinates

To know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts. To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design To review existing coding knowledge. To begin to be able to simplify code. To create a playable game. Lesson 2: Simulating a physical system To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design To know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts. To understand what a simulation is. To program a simulation using 2Code. Lesson 3: Decomposition and abstraction To know how to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables To know how to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. 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. Lesson 4: Friction and functions To know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts. To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design To understand how to use function in code. To begin to understand what a function is and how functions work in code. Lesson 5: Introducing strings To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design To understand what the different variable types are and how they are used differently. To understand how to create a string.	Decomposition Event If/if else function Nesting Object Physical system Properties Repeat Run score Simulation simplify sequence Variable Tab Timer

Lesson 6: Text variables and concatenation To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design To begin to explore text variables when coding. To understand what concatenation is and how it works.	
Spring 1 – 5.8 Word Processing using Word Internet safety day Lesson 1: Making a document from a blank page To know how to use many of the advanced features in order to create high quality communications. To know what a word processing tool is for. Lesson 2: Inserting images considering copyright To know how to use many of the advanced features in order to create high quality communications. To add and edit images to a word document. Lesson 3: Editing images in Word To know how to use many of the advanced features in order to create high quality communications. To know how to use word wrap with images and text. Lesson 4: Adding the text To know how to use many of the advanced features in order to create high quality communications. To change the look of text within a document. Lesson 5: Finishing touches To know how to use many of the advanced features in order to create high quality communications. To add features to a document to enhance its look and usability. Lesson 6: Presenting information using tables To know how to use many of the advanced features in order to create high quality communications. To use tables within MS Word to present information.	Template Footnotes Headers Columns Margins Borders Comments Thesaurus Table
Spring 2 - 5.6 3D Modelling using 2Design and Make Lesson 1: Introducing 2design and make To know how to use many of the advanced features in order to create high quality communications. To be introduced to the 2Design and Make tool.	CAD Modelling 3D 2D Viewpoint Polygon Net 3d printing Points Template

Lesson 2: Moving points To know how to use many of the advanced features in order to create high quality communications. To explore the effect of moving points when designing. Lesson 3: Designing for a purpose To know how to use many of the advanced features in order to create high quality communications. To design a 3D model to fit certain criteria. Lesson 4: Printing and making To know how to use many of the advanced features in order to create high quality communications. To refine and print a model.	
Summer 1 - Spreadsheets using Excel Lesson 1: Introducing Excel To know how to use applications to devise, construct and manipulate data. To identify cells. To write simple formulas. Lesson 2: Using formula To know how to use applications to devise, construct and manipulate data. To write formulas for all four number operations. Lesson 3: Manipulating formulae To know how to use applications to devise, construct and manipulate data. To write formulae to find the total Lesson 4: Using SUM To know how to use applications to devise, construct and manipulate data. To use formulae to solve problems. Lesson 5: Game spreadsheet To know how to use applications to devise, construct and manipulate data. To use formula to solve problems. To alter the appearance of a spreadsheet.	Spreadsheet Excel Row Column Cell Formula Cell reference SUM MIN MAX AVERAGE
Summer 2 – Scratch Lesson 1: Moving the sprite	Animate Sprite Background Code blocks Motion Looks Sound events Control Variables

To know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts.
To change the sprite.
To program the sprite to move.

Lesson 2: Using repeat to draw shapes
To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
To use repeat to draw shapes.

Lesson 3: Making a sprite dance
To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
To program the sprite move.
To alter the appearance of the sprite.

Lesson 4: Using IF statements
To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
To program an animation.

Lesson 5: Bat game
To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
To use co-ordinates in my game programming.

Lesson 6: Scoring and variables
To know how to translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. To know how to combine sequence, selection and repetition with other coding structures to achieve their algorithm design
To program a game with a score using variables.

Year 6

Key Skills and Knowledge Overview:

• • To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs.
• To know how to test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.
• To know how to translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other.
• To know how to use variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.
• To know how to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.
• To know how to collaborate with others online on sites approved and moderated by teachers.
• To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.
• To know and understand that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.
• To know how to act responsibly and sensitively online.
• To know how simple networks are set up and used.
• To know which is the most suitable applications and devices for the purposes of communication.
• To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications.
To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

Computing Knowledge	Vocabulary
Internet Safety - Autumn Term 1 Lesson 1: Digital Reflection To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 2: Playing safe To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 3: Cybercitizenship To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. To know how to act responsibly and sensitively online. Lesson 4: Personal Digital Devices To know and understand that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. Lesson 5: Do you live your life online? To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Lesson 6: Media Balance	Digital reflection Security Privacy policy Terms and conditions Cybercitizen Digital devices Age ratings PEGI ratings Malware Digital habit Balanced lifestyle

To know the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	
6.1 Coding using 2code - Autumn Term 2 Lesson 1 and 2: Designing and making a more complex programme To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs 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. Lesson 3: Using functions To know how to use variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. To use functions and understand why they are useful. To understand how functions are created and called. Lesson 4: Flow charts and control simulations To know how to test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. To know how to translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. To use flowcharts to test and debug a program. To create a simulation of a room in which devices can be controlled. Lesson 5: User inputs To know how to use variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. To understand the different options of generating user input in 2Code. To understand how user input can be used in a program. Lesson 6: Using text based adventures. To know how to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole. To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs To understand how 2Code can be used to make a text-based adventure game.	Action alert algorithm background Button Called command Co -ordinates Decomposition Debug developer Event If/if else Function Flowchart Get input Launch command Nesting Number variable Object procedure predict prompt Properties Repeat Run Score scene Simulation String Selection Variable Tab Timer

Spring 1 - PowerPoint – advanced features Internet safety day Lesson 1: Game /story plan To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications. To plan an interactive game for younger children. Lesson 2: Beginning the game/story To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications. To use transitions and animations. To insert clipart. To change slide backgrounds. Lesson 3: Developing the story/game To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications. To use action buttons Lesson 4: Adding sound To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications. To add sound clips to the presentation. Lesson 5: Completing the game/story To know how to confidently use many of the advanced features in order to create high quality, professional or efficient communications. To complete the game/story and share with younger children. Lesson 6: Internet safety day To know the risks of online communities and know how to minimise risk and report problems. To know the effect of online comments and show responsibility and sensitivity when online.	PowerPoint Animation Slides Transition Clipart Text box Font Media Audio Presentation Slideshow Stock image Design templates Action button Hyperlink Text wrapping
Spring 2 - Spreadsheets using Excel Lesson 1: Planning a theme park To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. To plan a theme park using Excel. To know the meaning of a spreadsheet and cell. Lesson 2: Calculating income To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. To use formula to calculate the total. To use formula to multiply. To use fill down/series.	Spreadsheet Excel Row Column Cell Formula Cell reference SUM MIN MAX AVERAGE Income Profit Fill down/fill series delimiter

Lesson 3: Running Costs To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. To use formula to calculate the total. To use formula to multiply. To use fill down/series. To change the alignment and appearance of cells. Lesson 4: Profits! To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. To use formula to calculate the total. To use formula to multiply. To use fill down/series. To create graphs from data. Lesson 5 and 6: Finish and evaluate To know how to select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. To use formula to calculate the total. To use formula to multiply. To use fill down/series. To create graphs from data.	
Summer 1 – Scratch Lesson 1: Drawing shapes To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs To draw shapes using sprites. Lesson 2: Drawing an aquarium To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs To program the sprite to move. To alter the background and sprite. Lesson 3: Drum Kit To know how to test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs To use sound in animations.	Animate Sprite Background Code blocks Motion Looks Sound Events Control Operators sensing Variables

To change the appearance of the sprite. Lesson 4: Dancing Disco To know how to use variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. To know how to translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. To create an animation. Lesson 5 and 6: Maze Game To know how to use variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. To know how to translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. To create an interactive game.	
Summer 2 - 6.6 Networks 6.8 Understanding Binary Lesson 1: The world wide web and the internet To know how to act responsibly and sensitively online. To know how simple networks are set up and used. .To discover what the children know about the Internet. Lesson 2: Our school network and accessing the internet To know how simple networks are set up and used. To find out what a LAN and WAN are. To find out how we access the internet in school. Lesson 3: Research To know which is the most suitable applications and devices for the purposes of communication. To research and find out about the age of the internet. To think about what the future might hold. Lesson 4: What is binary? To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. 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).	Internet Word wide web Network Router Local area network (LAN) Wide Area Network (WAN) Network cables wireless Events Base 10 Base 2 Binary Bit Byte Decimal Gigibyte Denary Digit Integer Kilobyte Machine code Switch Nibble Megabyte Tetrabyte Transitor Variable

To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics. Lesson 5: Counting in binary. To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. 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. Lesson 6: Converting from decimal to binary To know how to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. 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.	