Computing

	Term 1 (Autumn)	Term 2 (Autumn)	Term 3 (Spring)	Term 4 (Spring)	Term 5 (Summer)	Term 6 (Summer)
Reception	***Computing Systems and Networks - Technology around us.*** ***Number:*** Subitise (recognise quantities without counting) up to 5 through use of interactive maths games on the IWB. Computing in role play Recognise computing around them Explore information from various computing sources	***Computing Systems and Networks - Technology around us.*** ***Number:*** Subitise (recognise quantities without counting) up to 5 through use of interactive maths games on the IWB. Computing in role play Recognise computing around them Explore information from various computing sources	***Computing Systems and Networks – The Internet.*** ***Managing Self:*** Explain the reasons for rules, know right from wrong and try to behave accordingly through ESafety term and ESafety day with use of Digi Duck resources. ***E-Safety - Digiduck's big decision*** How to be a good friend online, critical thinking when online and starting to think about online content to help understand that what they read or see online might be true, untrue or someone's opinion. Safer Internet Day	***Computing Systems and Networks - Technology around us.*** ***Number:*** Subitise (recognise quantities without counting) up to 5 through use of interactive maths games on the IWB. Computing in role play Recognise computing around them Explore information from various computing sources	***Programming: Code-a-pillar/Easi Cars*** ***Fine Motor Skills:*** Using a range of small tools through use of keyboards and remote controls. ***Building Relationships:*** Work and play cooperatively and take turns with others through use of code-a-pillars and Easi Cars during continuous provision. ***Speaking:*** Offer explanations for why things might happen through use of code-a-pillars and Easi cars during continuous provision. ***Numerical Patterns:*** Exploring repeating patterns through use of the code-a-pillars.	***Programming: Code-a-pillar/Easi Cars*** ***Fine Motor Skills:*** Using a range of small tools through use of keyboards and remote controls. ***Building Relationships:*** Work and play cooperatively and take turns with others through use of code-a-pillars and Easi Cars during continuous provision. ***Speaking:*** Offer explanations for why things might happen through use of code-a-pillars and Easi cars during continuous provision. ***Numerical Patterns:*** Exploring repeating patterns through use of the code-a-pillars.
Year 1	***Computing systems and networks - Technology around us.*** Understanding of technology and how it can help them. Becoming more familiar with the different components of a computer by developing keyboard	***Creating Media - Digital Painting*** Exploring the world of digital art and its exciting range of creative tools. Creating their own paintings, while getting inspiration from a range of other artists. Considering their preferences when painting with, and without, the use of digital devices.	***E-Safety – ChildNet Smartie the Penguin*** Introducing pop ups and in app purchasing, inappropriate websites for their age group, cyberbullying, upsetting images, unreliable information and talking to strangers online. Safer Internet Day	***Data and Information – Grouping Data*** Introducing data and information. Using labels to put objects into groups, and labelling these groups. Counting a small number of objects, before and after the objects are grouped. Sorting objects into different groups, based on the properties they	***Programming A – Moving a robot*** Early programming concepts. Exploring using individual commands, both with others and as part of a computer program. Identify what each floor robot command does and predict the outcome of programs. Early stages of program design through the introduction of algorithms.	***Programming B – Programming Animations*** Introduces on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners

	and mouse skills, and also start to consider how to use technology responsibly.			choose. Answering questions about data.		will also be introduced to the early stages of program design through the introduction of algorithms.
Year 2	***Computing systems and networks – IT around us*** Exploring how IT benefits society in places such as shops, libraries, and hospitals. Discussing the responsible use of technology, and how to make smart choices when using it.	***Creating Media – Digital Photography*** Recognising that different devices can be used to capture photographs and experiencing capturing, editing, and improving photos. Recognising that images they see may not be real.	***E-Safety – ThinkuKnow Jessie and Friends*** ***Watching videos:*** Learning that while the internet can be enjoyable and fun, there are sometimes things online that can be upsetting or scary. ***Sharing Pictures:*** Learning about how images can get shared more widely than you first expect, and the importance of consent. ***Playing games:*** Learning that when playing online games they should keep their personal information private, only talk to people they know in real life and that they can tell an adult they trust if anything happens that makes them worried. Safer Internet Day	***Data and Information – Pictograms*** Introducing the term 'data'. Understanding what data means and how this can be collected in the form of a tally chart. Learning the term 'attribute' and use this to help them organise data. Presenting data in the form of pictograms and block diagrams. Using the data presented to answer questions.	***Programming A – Robot Algorithms*** Understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Use given commands in different orders to investigate how the order affects the outcome. Learning about design in programming, developing artwork and testing it for use in a program. Designing algorithms and then testing those algorithms as programs and debugging them.	***Programming B – Programming Quizzes*** Recaps on learning from the Year 1 Scratch Junior unit 'Programming B - Programming animations'. Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Learners evaluate their work and make improvements to their programming projects.
Year 3	***Computing systems and networks – Connecting Computers*** Understanding of digital devices, with an initial focus on inputs, processes and outputs. Comparing digital and non-digital devices and an introduction to network infrastructures devices like routers and switches. ***Touch Typing*** *Level 1 Stage 1-3 /*	***Creating Media – Stop-Frame Animation*** Using a range of techniques to create a stop-frame animation using tablets. Creating a story-based animation. Adding other types of media to their animation, such as music and text. ***Touch Typing*** *Level 1 Stage 1-3 / Familiarising with and use of number pad – TTRS*	***E-Safety – ChildNet Captain Kara and Winston's SMART Adventure*** **S** - Keep safe by being careful not to give out personal information online. **M** – Meeting (not everyone online is who they say they are.) **A** - Accepting emails, instant and direct messages, or opening files, images or texts from people you don't know or trust may contain viruses or nasty messages. **R** – Information on the internet may not always be true; it may be factually incorrect, out of date, or reflect someone's personal opinion or beliefs. Always check.	***Data and information – Branching databases*** Understanding of what a branching database is and how to create one. Understanding of what attributes are and how to use them to sort groups of objects by using yes/no questions. Creating physical and on-screen branching databases. Evaluating the effectiveness of branching databases and deciding what types of data should be presented as a branching database. ***Touch Typing*** *Level 1 Stage 1-3 / Familiarising with and use of number pad – TTRS*	***Programming A – Sequencing Sounds*** Exploring sequencing in programming through Scratch. Introduction to the programming environment. Introduced to a selection of motion, sound, and event blocks. Creating their own programs, featuring sequences. Applying stages of program design. ***Touch Typing*** *Level 1 Stage 1-3 / Familiarising with and use of number pad – TTRS*	***Programming B – Events and Actions*** Exploring links between events and actions, whilst consolidating prior learning relating to sequencing. Moving a sprite in four directions (up, down, left and right). Exploring movement within the context of a maze, using design to choose an appropriately sized sprite. Introducing programming extensions, through the use of pen blocks. Drawing lines with sprites and changing the size and colour of lines. Designing

	Familiarising with and use of number pad – TTRS		**T -** Tell a trusted adult. Safer Internet Day ***Touch Typing*** *Level 1 Stage 1-3 / Familiarising with and use of number pad – TTRS*			and coding their own maze tracing program. ***Touch Typing*** *Level 1 Stage 1-3 / Familiarising with and use of number pad – TTRS*
Year 4	***Computer systems and networks: The Internet*** Appreciating the internet as a network of networks which need to be kept secure. Learning about who owns content and what they can access, add, and create. Evaluating online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*	***Creating media: Photo Editing*** Developing their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. Considering the impact that editing images can have, and evaluating the effectiveness of their choices. ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*	***E-Safety - Google Interland*** ***Think before you share:*** How to share smartly with those they know and those they don't. ***Check it's for real:*** How to tell the difference between what's real and what's not. ***Protect your stuff:*** Keeping valuable information safe and avoid damaging devices, reputations and relationships. ***Respect each other:*** Having a positive impact on others and stop bullying in its tracks by refusing to join in. ***When in doubt, discuss:*** Talking to a trusted adult when they come across something they're not sure of online. Safer Internet Day ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*	***Data and information: Data Logging*** Considering how and why data is collected over time. Considering the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Collecting data as well as access data captured over long periods of time. Looking at data points, data sets, and logging intervals. Posing questions and then using data loggers to automatically collect the data needed to answer those questions. ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*	***Programming A: Repetition in shapes*** Repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*	***Programming B: Repetition in games*** Explores repetition in programming using Scratch. It begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. ***Touch Typing*** *Level 2 Stage 4-6 / Familiarising with and use of number pad – TTRS*
Year 5	***Computer systems and networks - Sharing information*** Understanding of computer systems and how information is transferred between systems and devices. Considering small-scale systems as well as large-scale	***Creating media – Video Editing*** Creating short videos in groups. Exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Guided with step-	***E-Safety – CyberSprint*** Looking at how to use technology safely, respectfully and responsibility. Learning how to recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact. Beginning to explore copyright and ownership, self-image and identity, managing online information, online relationships and reputation. Safer Internet Day	***Data and information - Flat-file databases*** Looking at how a flat-file database can be used to organise data in records. Using tools within a database to order and answer questions about data. Creating graphs and charts from data to help solve problems. Using a real-life database to answer a	***Programming A – Selection in physical computing*** Using physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Introducing a microcontroller (Crumble controller) and learning how to connect and program components (including output devices- LEDs and motors)	***Programming B - Selection in quizzes*** Developing knowledge of selection by revisiting how conditions can be used in programs and learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. Representing

	systems. Explaining the input, output, and process aspects of a variety of different real-world systems. ***Touch Typing*** *Level 3 Stage 7-9 / TTRS*	by-step support to take their idea from conception to completion. ***Touch Typing*** *Level 3 Stage 7-9 / TTRS*	***Touch Typing*** *Level 3 Stage 7-9 / TTRS*	question, and presenting work to others. ***Touch Typing*** *Level 3 Stage 7-9 / TTRS*	Introducing conditions as a means of controlling the flow of actions and make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure). ***Touch Typing*** *Level 3 Stage 7-9 / TTRS*	understanding in algorithms and by constructing programs using Scratch. Designing a quiz and implementing it as a program. ***Touch Typing*** *Level 3 Stage 7-9 / TTRS*
Year 6	***Computing Systems and Networks - Communication*** Learning about the World Wide Web as a communication tool. Learning how we find information on the World Wide Web. Learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. Investigating different methods of communication. Evaluating which methods of internet communication to use for particular purposes. ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*	***Creating Media – Webpage Creation*** Introduces the creation of websites for a chosen purpose. Identifying what makes a good web page and use this information to design and evaluate their own website. Paying specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths. ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*	**E-Safety - Digital Citizenship** Creation of a cyber-safety game, bringing together key areas covered during Year 1 – Year 5 as well as introducing new concepts. The meaning of cyber-bullying and its consequences and outcomes; the importance of privacy settings and keeping passwords safe; the pitfalls of sharing photographs and videos; the phrase 'Think before you send'; the meaning and importance of emojis; and the hidden costs of app usage and in-app purchasing. Safer Internet Day ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*	***Data and Information – Spreadsheets*** Introducing spreadsheets. Organising data into columns and rows to create their own data set. Understanding the importance of formatting data to support calculations, introducing formulas and understanding how they can be used to produce calculated data. Applying formulas that include a range of cells, and applying formulas to multiple cells by duplicating them. Using spreadsheets to plan an event and answer questions. Creating graphs and charts, and evaluating results in comparison to questions asked. ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*	***Programming A – Variables in Games*** Exploring the concept of variables in programming through games. Learning what variables are, and relate them to real-world examples of values that can be set and changed. Using variables to create a simulation of a scoreboard. Experimenting with variables in an existing project, then modifying them. Applying their knowledge of variables and designing to improve their game in Scratch. ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*	***Programming B – Sensing Movement*** Brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6. Opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit. ***Touch Typing*** *Level 4 Stage 10-12 / TTRS*