Year 1 Computing

Computing systems and network	Digital literacy: Creating media	Programming A – Moving a robot
E-safety ▪ To know who to speak to if something worrying is seen online. **Technology around us – basic skills** ▪ To identify technology ▪ To identify a computer and its main parts ▪ To use a mouse in different ways ▪ To use a keyboard to type on a computer ▪ To use the keyboard to edit text ▪ To create rules for using technology responsibly	**E-safety** ▪ To use the dolphin in school as an e-safety measure. **Digital painting – use paint on desktop** ▪ To describe what different freehand tools do ▪ To use the shape tool and the line tools ▪ To make careful choices when painting a digital picture ▪ To explain why I chose the tools I used ▪ To use a computer on my own to paint a picture and compare to a real picture	**Moving a Robot (using Bee-Bot)** ▪ To explain what a given command will do ▪ To act out a given word ▪ To combine 'forwards' and 'backwards' commands to make a sequence ▪ To combine four direction commands to make sequences ▪ To plan a simple program ▪ To find more than one solution to a problem

Digital Literacy:Data and information	Digital Literacy: Creating media	Programming B – Programming animations
E-safety Understand what a password is and what its purpose is. **Grouping Data** ▪ To label objects ▪ To identify that objects can be counted ▪ To count objects with the same properties ▪ To compare groups of objects ▪ To answer questions about groups of objects	**E-Safety** Understand what personal information is **Digital writing – use word** ▪ Switch on and off a computer (relate to saving energy) and log into Year group ▪ Mouse skills- understanding left and right click, double clicking (opening/ selecting) ▪ To use a computer to write ▪ To add and remove text on a computer ▪ To identify that the look of text can be changed on a computer ▪ To make careful choices when changing text ▪ To explain why I used the tools that I chose	**E-safety** Think about the ways children can use the internet (e.g. YouTube, games) **Use scratch jnr** ▪ To choose a command for a given purpose ▪ To show that a series of commands can be joined together ▪ To identify the effect of changing a value ▪ To explain that each sprite has its own instructions ▪ To design the parts of a project ▪ To use my algorithm to create a program

Year 2 Computing

Computing systems and network	Digital literacy: Creating media	Programming A – Robot Algorithms
E-safety • Know how to use school online safety button **IT around us – basic skills** • To recognise the uses and features of information technology • To identify the uses of information technology in the school • To identify information technology beyond school • To explain how information technology helps us • To explain how to use information technology safely • To recognise that choices are made when using information technology	**E-safety** • Understand the importance of being kind and polite when online **Digital photography (iPads)** • To use a digital device to take a photograph • To make choices when taking a photograph • To describe what makes a good photograph • To decide how photographs can be improved • To recognise that photos can be changed • To create a digital book using photos and text	**E-safety** • Agree simple sensible e-safety rules **Moving a Robot (Bee-Bots or Botley)** • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program that I have written

Digital Literacy: Data and information	Digital Literacy: Creating media	Programming B
E-safety • To know to talk to someone if an online image or text makes them unhappy **Pictograms (j2e pictogram and j2e chart 2 simple)** • To recognise that we can count and compare objects using tally charts • To recognise that objects can be represented as pictures • To create a pictogram • To select objects by attribute and make comparisons • To recognise that people can be described by attributes • To explain that we can present information using a computer	**E-Safety** • Create a set of class rules to stay safe on-line. **Creating (Chrome Music Lab)** • To say how music can make us feel • To identify that there are patterns in music • To experiment with sound using a computer • To use a computer to create a musical pattern • To create music for a purpose • To review and refine our computer work	**E-Safety** • Understand the importance of keeping passwords private. **Programming Animations (ScratchJr)** • To explain that a sequence of commands has a start • To explain that a sequence of commands has an outcome • To create a program using a given design • To change a given design • To create a program using my own design • To decide how my project can be improved

Year 3 Computing

Computing systems and network	Digital literacy: Creating media	Programming A
E-safety • To know the rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them. **Connecting computers** • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way that we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected • To recognise the physical components of a network	**E-safety** • To know to talk to someone if an online image or text makes them unhappy. **Stop-frame animation (iMotion or Stop Motion Studio)** • To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully • To review and improve an animation • To evaluate the impact of adding other media to an animation	**Esafety** • To know not to give any personal information online **Sequencing sounds (Scratch)** • To explore a new programming environment • To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description

Digital Literacy: Data and information	Digital Literacy: Creating media	Programming B
E-safety • Be polite and sensible when writing online **Branching data bases (J2e)** • To create questions with yes/no answers • To create a branching database • To explain why it is helpful for a database to be well structured • To plan the structure of a branching database • To independently create an identification tool	**E-safety** • Talk about games they like to play online **Desktop publishing (Canva)** • To recognise how text and images convey information • To recognise that text and layout can be edited • To choose appropriate page settings • To add content to a desktop publishing publication • To consider how different layouts can suit different purposes • To consider the benefits of desktop publishing	**E-safety** • Discuss making good choices- content and screen time **Events and actions (Scratch)** • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in a program • To design and create a maze-based challenge

Year 4 Computing

Computing systems and network	Digital literacy: Creating media	Programming A
E-safety • To know the importance of protecting themselves online and never give any personal information away. **The Internet and World Wide Web** • To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be shared via the World Wide Web (WWW) • To describe how content can be added and accessed on the World Wide Web (WWW) • To recognise how the content of the WWW is created by people • To evaluate the consequences of unreliable content	**E-safety** • To know what sorts of boundaries are appropriate in friendships with peers and others (including in a digital context). **Audio production (audacity , soundtrap)** • To identify that sound can be recorded • To explain that audio recordings can be edited • To recognise the different parts of creating a podcast project • To apply audio editing skills independently • To combine audio to enhance my podcast project • To evaluate the effective use of audio	**Esafety** • To know what sorts of boundaries are appropriate in friendships with peers and others **Repetition in shapes (terrapin Logo)** • To identify that accuracy in programming is important • To create a program in a text-based language • To explain what 'repeat' means • To modify a count-controlled loop to produce a given outcome • To create a program that uses count-controlled loops to produce a given outcome

Digital Literacy: Data and information	Digital Literacy: Creating media	Programming B
E-safety • To understand the importance of being respectful online and make positive comments. **Branching data bases** • To create questions with yes/no answers • To create a branching database • To explain why it is helpful for a database to be well structured • To plan the structure of a branching database • To independently create an identification tool	**E-safety** • To know that everything posted online can be seen by all and can be changed. **Data logging (Data loggers/microbits)** • To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects 'data points' from sensors over time • To recognise how a computer can help us analyse data • To identify the data needed to answer questions • To use data from sensors to answer questions	**E-safety** • To understand how information and data is shared and used online **Events and actions (Scratch)** • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count-controlled loops • To develop a design that includes two or more loops which run at the same time • To modify an infinite loop in a given program • To design a project that includes repetition To create a project that includes repetition

Year 5 Computing

Digital Literacy: Computing systems and networks	Digital Literacy: Creating media	Progamming A
E-safety ▪ To understand the importance of protecting my personal information, using a nickname and not leaving a digital footprint. **Systems and Searching** • To explain that computers can be connected together to form systems • To recognise the role of computer systems in our lives • To experiment with search engines • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important, and to whom	**E-safety** ▪ To understand that they should not publish pictures of others without their permission and that everything posted online is public property can be seen by all and can be edited and manipulated. **Video Production** • To explain what makes a video effective • To use a digital device to record video • To capture video using a range of techniques Learners will plan a video by creating a storyboard. • To identify that video can be improved through reshooting and editing • To consider the impact of the choices made when making and sharing a video	**E-safety** ▪ To understand the importance of keeping any negative texts and emails as evidence of potential cyberbullying and report anything to a trusted adult **Sensing movement : using the microbit** • To be introduced to the micro:bit as an input, process, output device that can be programmed ▪ To explain that selection can control the flow of a program ▪ To update a variable with a user input ▪ To use a conditional statement to compare a variable to a value ▪ To design a project that uses inputs and outputs on a controllable device ▪ To develop a program to use inputs and outputs on a controllable device
Greater depth		

Digital literacy: Data and information	Digital Literacy: Creating media	Programming B

E-safety • To understand that the same principles apply to online relationships as to face-to face relationships, including the importance of respect for others online including when we are anonymous **Flat-file databases** • To use a form to record information • To explain what a field and a record is in a database • To outline how you can answer questions by grouping and then sorting data • To explain that tools can be used to select specific data • To explain that computer programs can be used to compare data visually • To use a real-world database to answer questions	**E-safety** • To critically consider their online friendships and sources of information including awareness of the risks of the risks associated with people they have never met. **Introduction to vector graphics** • To identify that drawing tools can be used to produce different outcomes • To create a vector drawing by combining shapes • To use tools to achieve a desired effect • To recognise that vector drawings consist of layers • To group objects to make them easier to work with • To apply about vector drawings and create a vector drawing for a specific purpose	**E-safety** • To understand the importance of keeping any negative texts and emails as evidence of potential cyberbullying and report anything to a trusted adult **Selection in quizzes** • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design a program that uses selection • To create a program that uses selection • To evaluate my program
Greater depth		

Year 6 Computing

Digital Literacy: Communication and collaboration	Digital Literacy: Creating media	Progamming A
Computing systems and networks **E-safety** • To understand the importance of being respectful online and not to meet people met online as they sometimes behave differently online, including by pretending to be someone they are not. • To know how to report anything suspicious • To explain the importance of an internet addresses • To recognise how data is transferred across the internet • To explain how sharing information online can help people to work together • To evaluate different ways of working together online • To recognise how we communicate using technology • Through these activities, learners explore issues around privacy, information security and how to report concerns about inappropriate content online.	**Web page creation** **E-safety** • Understand the potential risks of internet communication – phishing, scamming. • Be critical and evaluate content looking at bias. • To explore and review existing websites and evaluate their content • To look different layout features available in Google Sites and look at common features of a website. • To consider the ownership and use of images (copyright) • To create a website in Google Sites • To edit website and create multiple web pages for their site and use hyperlinks to link them together as detailed in their planning. • Childen will consider the implications of linking to content owned by other people and create hyperlinks on their own websites that link to other people's work	**Introducing variables in games** **E-safety** • To understand age restrictions of social media and games and create secure passwords. • Introducing variables- To define a 'variable' as something that is changeable. • To program a variable as a placeholder in memory for a single value. • To choose how to improve a game by using variables. • To create and name variables to create their own game. • Create art work for game and add other variables. • To degug and improve my game.
Greater depth		

Digital literacy: Data and information	Digital Literacy: Creating media	Progamming B

Introducation to spreadsheets	3D modelling	Selection in physical programming
E-Safety ▪ Understand the potential risks of internet communication – phishing, scamming • To create a data set in a spreadsheet • To build a data set in a spreadsheet • To explain that formulas can be used to produce calculated data • To apply formulas to data • To create a spreadsheet to plan an event • To choose suitable ways to present data	**E-Safety** • To know that cyber bullying is against the law and has long term consequences • To recognise that you can work in three dimensions on a computer • To identify that digital 3D objects can be modified • To recognise that objects can be combined in a 3D model • To create a 3D model for a given purpose • To create my own digital 3D model	**E-Safety** ▪ To know how to protect personal information and not leaving a digital footprint and be aware of privacy setting • To control a simple circuit connected to a computer • To write a program that includes count-controlled loops • To explain that a loop can stop when a condition is met • To explain that a loop can be used to repeatedly check whether a condition has been met • To design a physical project that includes selection • To create a program that controls a physical computing project
Greater depth		