St Mary's CE (VA) Primary School	Progression of Computing Skills						
Area of Study	**Reception**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
E Safety including e-mails	Can they talk about what they are doing on a computer? Can they say if something they find on the internet makes them feel bad? Can they speak to an adult about what they have seen? Can I follow the school's safer internet rules?	Check it's for real and protect yourself Think before you share and respect each other How to act if find inappropriate content	Check it's for real Send and receive class emails and understand email conduct Think before you share, protect yourself and be brave Can I identify kind and unkind behaviour online?	Think before you share and Respect Understand once an online message has been sent it can't be taken back How to respond if being asked for personal information Use email address book Open and send an attachment Can I create strong passwords and understand privacy settings?	Social networking sites and gaming sites carry risks. Benefits of a nickname for online use. Behave appropriately online. Cyber bullying and reporting. Identify when attachments may not be safe. Use cc and bcc. Send work to class teacher.	Understand privacy settings on social media sites. Dangers of communicating on devices such as xbox, PSP, phones. Can they verify information they have researched using more than one site. Discuss positive and negative impacts of using IT. Understand they should not publish other people's pictures or tag them on the internet. Do they know content put online is extremely difficult to remove? Create a strong password and	Use and amend their own privacy settings to keep themselves safe. Can they understand that some malicious adults may use various techniques to make contact and elicit personal information? Understand dangers of chatting/meeting up with online 'friends'. Can they understand the term peer pressure and how powerful the emotion of 'feeling left out' can be? Can they explain why people may publish content on the internet that is not accurate?

						realise they need to be regularly updated. Know where they can access support regarding online incidents.	Can they identify and recognise the potential risks of scamming and phishing? Do they understand the concept of being a good digital citizen? Can they access support surrounding incidents online?
Communicating / Presentation.	Can they use a digital device to take a photograph? Can they understand the purpose of and experiment with hardware such as cameras, computers, ipads, voice recorders etc? Can they write their name using a keyboard on different devices? Can they use the caps lock for the	The difference between e-books and story books. Add animation. Add sound. Background through copying and pasting and share ebooks with class.	Know digital content can be represented in many forms. Add clip art. Add photos. Structure information into a table. Manipulate and present digital content and information.	Create a publishing tool to create a poster or a leaflet Create presentation using powerpoint Changes layout of slides and adding images and sounds Sequence short pieces of music using pre-recorded sounds	Create a presentation using powerpoint. Adding transitions. Insert sound recordings. Choose and insert images. Animation frames. Onion skin tool. Add backgrounds and sounds. Stop Motion animation. Create an extended piece of music using pre-recorded sample for specific	Plan a storyboard for a video or animation. Create, edit and refine. Incorporate filming techniques, sound effects, music. *Create a film for school website on a topical subject*	Create a non- linear presentation. Make quizzes with different question types. Make a quiz that requires a player to search a database. Create a multimedia presentation. Confidently use text formatting tools. Explore the menu bar and experiment with images.

	initial sound in their name? Can they use the space bar, backspace and return key? Can they use a simple paint programme with increasing mouse control? Can they create an image relating to a topic covered in class and add a title? Draw a self- portrait or character. Use the fill tool to fill a picture. Draw a symmetrical picture using 2simple.				audience and evaluate.		Presentation to include: Sound, animation, video, buttons to navigate. Consider design principles, make independent choices about the best media to use considering needs of the audience and the impact the presentation will have.
Algorithms and Programs	Can they use a range of control toys and devices? Look at controlling a car around a track, cause and effect of pressing buttons. Use the buttons to make the bee bots	Plan a journey for a programmable toy Create a series of instructions to move around a course	Use floor turtles to explore ¼, ½ and full turn and sequencing of instructions Explore screen turtle to input sequences and draw shapes	Plan complex series of instructions for screen and floor turtles and test and amend instructions for purpose Create basic applications, investigating how	Design/write a simple program to achieve a specific goal. Create variables and If/Else statements. Debug a program.	Design/write a program to achieve a specific goal. Simulate a physical system. Introduce variables. Create and improve a game.	Design and write a more complex program. Introduce functions. Introduce variables. Use flow charts to test and debug a program.

	move across a map or course.	Know that commands affect algorithms. Create and debug a simple program. Use event, object and action code blocks	Understand the screen turtle can be directed through the use of text. Use repeat and timer commands. Debug a program.	different variables can be changed Explore simulations and discuss benefits	Make a control simulation. To understand decomposition and abstraction. Explore some simulations and evaluate them.	Plan a game. Create a game environment and quest. Evaluate their own and others' game. Design a program which interacts with external controllers. Design a building for a purpose. Print a design as a 2D net. Explore possibilities of 3D printing.	Create and improve a game.
Data retrieving and organising			Create graphs from data collected Use a database and use search tools	Create a graph from a database Create simple branching database, identify objects, question to classify data	Explain what a spreadsheet is. Use terms colon, cells, rows and columns. Enter data to create a graph.	Use a spreadsheet to: Convert unit of measurements; model a real-life problem; plan a cake sale; use the count tool to answer hypotheses; create simple formulae.	Use spreadsheets in a real-life situation to investigate probability, calculate discounts/final e.g. prices in a sale, plan how to spend pocket money, plan a school charity day.
Using technology – reinforce across the curriculum.	Can I recognise a range of technology that is used in places such as homes and schools?	Use keyboard skills to type in simple usernames and passwords.	Save work to a folder and retrieve it when needed.	Use technology to suit a particular purpose. Navigate the internet.	Do they know what a browser is and use it to navigate a variety of programs?	Download a document and save it to a computer or given device.	Use tabs to make a comparison of a website. Understand computer networks

	Can I select and use technology for a particular purpose? Can I access and use simple activities using touch technology with increasing control? Can I begin to logon/unlock a digital device? (e.g. digital camera, iPads etc)	Launch appropriate programmes to task. Open and close a piece of equipment safely. Explore technology in a range of jobs and look at the purposes of their uses and why they are needed for a variety of roles.	Understand how to edit and copy information. Capture a digital image, retrieve and manipulate.	Find relevant information by browsing a menu. Search by keyword, using a child friendly search engine. Bookmark a page into favourites	Use tabbed browsing to open 2 or more web pages at the same time. Can they open a variety of links and use them? Can they use a range of digital devices and combine a variety of software? Can they use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content?	Decide which sections are appropriate to copy and paste from a variety of web pages	including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
Vocabulary: Using technology	**Mouse:** a small device that you move across a surface in order to move a cursor on your computer screen **Cursor:** a line on a computer screen that moves to show the point where work is being done	**Passwords –** a string of characters that allows access to a computer **Search engine –** a programme that searches keywords against a database typically to find websites	**Devices –** a unit of physical hardware or equipment e.g. mobile phone, laptop, tablet. **Search Engine -** a programme that searches keywords against a database typically to find websites	**Bookmarks –** a unit of physical hardware or equipment e.g. mobile phone, laptop, tablet.	**Domain Name -** the part of the address that identifies a computer, organisation, or other entity **Search Engine -** a type of website that helps a computer user find information on the Internet.	**Download** - getting information from another computer or server.	**Network -** Computers linked within a building or area. **Internet** - A network of computers linked all over the world. **Screen Grab –**an image that you create by capturing and copying part or

	Screen: a flat surface in a cinema, on a television, or as part of a computer, on which pictures or words are shown **Keyboard:** the set of keys on a computer or typewriter that you press in order to make it work **Caps Lock:** a key on a computer keyboard that you press to make any letters you type appear as capital letters until you press it again		**Links –** an object that if you click on it, it will take you somewhere else in the page or to a new page/website.		**Tabs -** a marker that allows you to view multiple webpages. **Browser -** a computer programme used to navigate the world wide web		all of a computer display at a particular moment.
Vocabulary: E-Safety			**Email -** Messages distributed by electronic means from one computer user to one or more people.	**Attachment -** A computer file sent with an email. **Address book -** A list of people who you regularly send an email to.	**CC -** A way of sending a copy of your email to other people so they can see the information in it. **BCC** - "blind carbon copy." A way of sending copies of an email to other people but the other recipients	**Privacy settings** - the part of a social networking website, internet browser, piece of software, etc. that allows you to control who sees information about you **Digital footprint -** The information	**Influence –** to have an effect on someone- e.g. encourage them to buy something. **Manipulation –** controlling someone to your advantage – often unfairly or dishonestly.

					won't be able to see that someone else has been sent a copy of the email.	about a person that exists on the Internet as a result of their online activity.	**Scams –** an illegal plan for making money by tricking people. **Phishing –** the fraudulent practice of sending emails purporting to be from reputable companies to encourage individuals to reveal personal information such as password and credit card numbers. **PEGI –** Pan European Game Information – video game content rating. **BBFC –** British Board of Film Classification – an organisation that classifies films, videos and games.

Vocabulary: Communicating/ Presentation		**Animation -** Process of giving the illusion of movement to drawings and models. **Font -** The style of text used in a piece of writing on the computer or tablet. **Sound Effect -** A sound other than speech or music made for use in a play, film or computer file. **E-Book -** A book that can be read on the computer or on a tablet. **File -** A piece of work on the computer.	**Digital content** - any content that exists in the form of digital data. **Presentation -** A speech or talk in which a new product, idea, or piece of work is shown and explained to an audience. **Concept Map (Mind Map) -** A tool for organising and representing knowledge. They form a web of ideas which are all interconnected. **Node** - A way to represent a concept or idea using text and/or images. **Audience** - The people giving attention to something.	**Media -** Images, videos or sounds which can be added to a presentation. **Presentation Program -** A computer program, such as PowerPoint, which is used to create a presentation. **Slide -** A single page within a presentation. **Text box -** A box in which text can be inputted and formatted. **Text formatting -** When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics. **Slideshow -** A collection of pages arranged in sequence that contains text and images to present	**Animation effects** - Visual effects used on objects such as text boxes or pictures. They allow these objects to be bought on and off the slide in a certain way. **Transition -** The interesting effect used when one slide moves onto the next. **Flipbook -** A book with pictures drawn in a way that makes them appear to move when the pages are flicked. **Frame -** A single image in an animation. **Onion skinning -** A process where the shadow image of the previous frame is present to help you line up the objects of the animation correctly.	**Storyboard -** a sequence of drawings, typically with some directions and dialogue, representing the shots planned for a film or television production **Location** is the place where something happens **Prop** - an object used on stage or screen by actors during a performance or screen production **Camera angle -** marks the specific location at which the movie camera or video camera is placed to take a shot.	**Multimedia -** Combined use of more than one media, text, image, sound, etc. **Hyperlink -** An action button that shortcuts you to another program, website, or document from the current slide

				to an audience. Often referred to as a PowerPoint presentation.	**Background -** A non-moving image that appears behind the animated images. **Stop motion -** A technique whereby the camera is repeatedly stopped and started, for example to give animated figures the impression of movement. **Sampling** - the act of taking a portion of one sound recording and reusing it as an instrument or element of a new recording.		

Vocabulary: Algorithms and programs		**Algorithm –** a set of written instructions to solve a problem. **Program –** an algorithm that has been translated into commands the computer can understand. **Debug** – identify and fix errors in a program. **Direction -** A course along which someone or something moves.	**Event –** an action that is recognised by the computer e.g. key stroke, mouse, click **Background -** The part of the program design that shows behind everything else. It sets the scene for the story or game. **Action -** Types of commands, which are run on an object. They could be used to move an object or change a property. **Nesting -** When you write a command inside something else e.g. a block of commands could be nested inside a timer. **Debug/Debugging -** Looking for any problems in the code, fixing and testing them.	**Alert** This is a type of output. It shows a pop-up of text on the screen. **Develop -** The process of designing programs and writing code. **Event -** Something that causes a block of code to be run. **Execute -** To run a computer program. Flowchart A diagram which represents an algorithm. **Blocks of Command -** A series of a few code instructions. **Collision Detection -** Detecting when two characters on the screen touch each other.	**If/Else** A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run. **Repeat Until** This command can be used to make a block of commands run until something certain happens. **Timer** Use this command to run a block of commands after a timed delay or at regular intervals. **Code Block** An individual code command represented visually by a block on the screen. **Flowchart** A diagram which	**Abstraction** A way of decluttering and removing unnecessary details to get a program functioning **Run** To cause the instruction in a program to be carried out. **Function** A block or sequence of code that you can access when you need it, so you don't have to rewrite the code and repeat it. Instead you simply 'call' the function each time you want it. **Sequence** When a computer program runs commands in order. This can also include "repeat" or a timer. **Physical System** A system or process which happens in the real world using robotics, sensors or	**Decomposition** A method of breaking down a task into manageable components. This makes it easier as the components can be coded separately and then brought back together. **Called** A line of code that triggers a function to be executed. **Tab** A way to organise a program into separate pages (tabs) of code. **Developer** A person who writes, debugs and executes code to create a program. **Get Input** This puts the text that a user types into the computer's temporary memory to be used to control the program flow.

					represents an algorithm **Selection** This is a conditional/decisio n command. When selection is used, a program will choose a different outcome depending on a condition. **Variable** A named area in computer memory. A variable has a name and a value. The program can change this variable value. **Command** A single instruction in a computer program. **Number Variable** A variable that is numerical.	motors e.g. traffic lights. **Simulation** A model that represents a real or imaginary situation.	**Launch Command** A command that launches another program within an existing program. **Procedure** A set of coded instructions that perform a certain task.
Vocabulary: Data retrieving and organising				**Database** A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.	**Spreadsheet** A computer program that represents information in a grid of rows and columns. Any cell in the grid may contain either data or a formula that describes the value	**Formula** Use the formula wizard or type into the formula bar to create a formula in a cell, this will calculate the value for the cells based upon the value of	**Sum** a formula that adds all the numbers in a range of cells

				Branching database Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees. **Data** Facts and statistics collected together for information.	to be inserted based on the values in other cells. **Columns** Vertical reference points for the cells in a spreadsheet. **Colon** tells Excel to include all cells between the two endpoint cell references. **Cells** An individual section of a spreadsheet grid. It contains data or calculations **Rows** Horizontal reference points for the cells in a spreadsheet. **Charts** Use this button to create a variety of graph types for the data in the spreadsheet. **Cell reference** The letter and number combination which shows a cell's	other cells in the spreadsheet. **Formula Wizard** The wizard guides you in creating a variety of formulae for a cell such as calculations, totals, averages, minimum and maximum for the selected cells. **Average** Symbols used to represent comparing two values	

					location on the page		