



COMPUTING PROGRESSION MAP OF SKILLS AND KNOWLEDGE AT BISHOPS ITCHINGTON PRIMARY SCHOOL

Information Technology					
Key Stage One					
National Curriculum statement	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.				
	Word processing and publishing	Presenting	Digital image, film and sound	Handling data	The internet
Year One	<ul style="list-style-type: none"> - Type using two hands. - Use the space bar to make space and delete to delete letters/words - Make a new line using enter/return. 	<ul style="list-style-type: none"> - Order images to create a simple storyboard. - Add animation and sound to a storyboard. - Sequence a series of pictures to explain my understanding of a topic. - Save my work to a class online display board to share with peers. 	<ul style="list-style-type: none"> - Use a painting app to create a picture. - Take photographs - Record and playback audio - Work with a simple animation app such as Puppet Pals or Shadow Puppets to tell a story 	<ul style="list-style-type: none"> - Sort items using two or more criteria. - Collect data on a topic. - Create a digital pictogram. - Enter data into a spreadsheet. 	<ul style="list-style-type: none"> - Use appropriate buttons, menus and hyperlinks to navigate web sites for stored information. - Enter text into a search engine to find specific given web sites - Understand that different forms of information (text, images, video) exist and that some are more useful than others for specific purposes.
Year Two	<ul style="list-style-type: none"> - Save their work in their folder. - Edit using backspace, delete and the arrow keys. - format the font - Copy and paste images and text - Use caps locks for capital letters. - Add images to a document. 	<ul style="list-style-type: none"> - Add a voice recording to a storyboard. - Import images to a project from the web and camera roll. - Present information using a quiz. - Add photos and clipart to a presentation. - Add text to a presentation. - Present information to others. 	<ul style="list-style-type: none"> - Begin to discuss the quality of their image and make decisions (e.g. delete a blurred image) - Explore a range of electronic music and sound devices including keyboards, tablets – - Begin to understand that music and sound can affect mood and atmosphere of a image/film. 	<ul style="list-style-type: none"> - Construct a branching database using yes/no questions. - Use a branching database to answer questions. - Use a non-binary database to answer questions. - Use a spreadsheet to find totals and produce graphs. 	<ul style="list-style-type: none"> - Locate specific sites by typing a website address (URL) into the address bar in a web browser. - Begin to develop key questions to help find information. - Be aware of responsible internet use and the school's acceptable use policy.

Information Technology					
Key Stage Two					
National Curriculum statement	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.				Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
	Word processing and publishing	Presenting	Digital image, film and sound	Handling data	The internet
Year Three	<ul style="list-style-type: none"> - Use index fingers, home keys, left and right keys on the keyboard. - Edit the style and effect of my text and images for purpose. - Use borders and shadows. - Use cut copy and paste to organise and duplicate. 	<ul style="list-style-type: none"> - Create a simple web page. - Create a simple digital timeline/mindmap. - Understand the uses of presentation software (e.g PowerPoint). - Create a presentation for a purpose. - Add media to a presentation. - Add animations to a presentation. - Use the skills learnt to design and create an engaging presentation. 	<ul style="list-style-type: none"> - Add simple titles, music and narration to films. - Capture “footage” and use movie editing apps. Arrange, trim and cut clips to create a short film for a given audience. - Use recorded sound files in other applications . - Use music software or app to experiment with capturing, repeating and reordering sound patterns. 	<ul style="list-style-type: none"> - Design their own branching databases, adding images and text. - Use formula and cell references within spreadsheets. - Use spreadsheets to create a range of graphs and charts and understand that different graphs are used for different purposes - Organise, present, analyse and interpret the data in tables, tally charts, charts / graphs, using IT where appropriate. - Know, understand and use the vocabulary: file, record, field, data and information. 	<ul style="list-style-type: none"> - Children can carry out simple searches to retrieve digital content. - They understand that to do this, they are connecting to the internet and using a search engine. - Use found information purposefully to complete specific tasks e.g. copy, paste and edit relevant information. - Understand a website has a unique address and the need for precision when typing it.
Year Four	<ul style="list-style-type: none"> - Combine digital images and text from a variety of sources for a variety of tasks. - Use font sizes appropriately for audience and purpose. - Use spell check and thesaurus functions. - Use undo and redo. - Align text. 	<ul style="list-style-type: none"> - Create presentations demonstrating understanding with a range of media. - Add timings to a presentation. - Use hyperlinks to link slides. - Create an eBook with text, images and sound. 	<ul style="list-style-type: none"> - Use music software / app to create a simple multipart percussion composition. - Create a short animated sequence using an animation app - Understand that copyright exists on most recorded music - Discuss and evaluate the quality of their own and others’ photos and make decisions (e.g. keep, delete, edit) 	<ul style="list-style-type: none"> - Format cells within a spreadsheet. - Use the formula wizard within a spreadsheet. - Use spreadsheets to solve a given task. - Begin to develop skills to identify what data needs to be collected and design a questionnaire or survey to aid its collection. - Understand the need to structure information 	<ul style="list-style-type: none"> - Children understand the function, features and layout of a search engine. - They can appraise selected webpages for credibility and information at a basic level. - Develop key questions and key words to search for specific information to answer a problem. - Understand the dynamics of search engines and know that there are different search engines - some within sites, and some for the whole of the Internet (e.g. Google).

		<ul style="list-style-type: none"> - Create a digital timeline/mindmap and include different media 	<ul style="list-style-type: none"> - Understand that evaluation and improvement is a vital part of a design processes and that tech allows us to make changes quickly 	<ul style="list-style-type: none"> properly in a database or spreadsheet. 	
Year Five	<ul style="list-style-type: none"> - Add hyperlinks to a document. - Organise and reorganise text to suit a purpose. - Use bullets and numbering. - Insert text boxes. - Change orientation of the page. 	<ul style="list-style-type: none"> - Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365 - Create and export interactive presentations including a variety of media, animations, transitions and other effects. - Use concept maps to visually represent and generate complex ideas. - Create collaborative concept maps and present to an audience. 	<ul style="list-style-type: none"> - Independently make decisions to capture, store, retrieve and edit digital images for a particular purpose. - Independently plan and create a short animated sequence using an animation app to communicate a specific idea, using a storyboard and timeline. - Combine stills, video and sound in to create a longer film. - Create sounds and compositions to add to their presentations/films / images / photos. -- Understand copyright when selecting assets found online 	<ul style="list-style-type: none"> - Use spreadsheets to model real life problems. - Change data and formulae in a spreadsheet to answer 'what if...?' questions and check predictions - Learn how to search for information in a database. - Contribute to a class database. - Create a database around a chosen topic 	<ul style="list-style-type: none"> - Children search with greater complexity for digital content when using a search engine. - Explain in some detail how credible a webpage is and the information it contains. - Develop and discuss strategies for finding information (different keywords, cross checking with other sites, referring to other sources such as books, people, etc). - Consider the effectiveness of search results and refine where necessary. - Skim and select information checking for bias and different viewpoints.
Year Six	<ul style="list-style-type: none"> - Confidently use the best application to demonstrate their learning. - Format a text to suit a purpose. – Publish documents online for a specific audience. - Use headings and columns to organise their work. - Insert hyperlinks . - Insert tables. 	<ul style="list-style-type: none"> - Create web pages which include a variety of media. - Choose suitable presentation of information, using a variety of media suited to the audience. - Evaluate own content and consider ways to improvements. 	<ul style="list-style-type: none"> - Sequence clips of mixed media in a timeline, adding voiceovers. - Trim and cut film clips and add titles and transitions. - Make appropriate use of transitions and special effects when editing films and understand the effect they will have on the audience. - Be aware of different file formats and be aware that they're not always compatible. 	<ul style="list-style-type: none"> - Write advanced formulas within spreadsheets. - Create spreadsheets to solve real-life problems. - Use graphical information to answer questions, predict patterns and solve simple problems. - 	<ul style="list-style-type: none"> - Children readily apply filters when searching for digital content. - They are able to explain in detail how credible a webpage is and the information it contains. - Compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.

	Computer Science			Digital Literacy	
National Curriculum Statement	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Create and debug simple programs.	Use logical reasoning to predict the behaviour of simple programs.	Recognise common uses of information technology beyond school.	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
Year One	- Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. - They know that an algorithm written for a computer is called a program.	- Children can work out what is wrong with a simple algorithm when the steps are out of order and can write their own simple algorithm. - Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code.	- When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program.	- Children understand what is meant by technology and can identify a variety of examples both in and out of school. - They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	See Online Safety Progression of Skills.
Year Two	- Children can explain that an algorithm is a set of instructions to complete a task. - When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.	- Children can create a simple program that achieves a specific purpose. - They can also identify and correct some errors, e.g. Debug an incorrect code. - Children's program designs display a growing awareness of the need for logical, programmable steps.	- Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	- Children can effectively retrieve relevant, purposeful digital content using a search engine. - They can apply their learning of effective searching beyond the classroom. - They can share this knowledge using publishing software. - Children make links between technology they see around them and coding and multimedia work they do in school (e.g. animations, interactive code and programs).	See Online Safety Progression of Skills.

Key Stage Two	Computer Science			
National Curriculum	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.
Year Three	<ul style="list-style-type: none"> - Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. - Their design shows that they are thinking of the desired task and how this translates into code. - Children can identify an error within their program that prevents it following the desired algorithm and then fix it. 	<ul style="list-style-type: none"> - Children demonstrate the ability to design and code a program that follows a simple sequence. - They experiment with timers to achieve repetition effects in their programs. - Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. - Children understand how variables can be used to store information while a program is executing. 	<ul style="list-style-type: none"> - Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. - They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. - In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately. 	<ul style="list-style-type: none"> - Children can list a range of ways that the internet can be used to provide different methods of communication. - They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails. - They can describe appropriate email conventions when communicating in this way.
Year Four	<ul style="list-style-type: none"> - When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. - Children 	<ul style="list-style-type: none"> - Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. - They understand 'if statements' for selection and attempt to combine these 	<ul style="list-style-type: none"> - Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. 	<ul style="list-style-type: none"> - Children recognise the main component parts of hardware which allow computers to join and form a network. - Their ability to understand the online safety implications associated

	<p>make more intuitive attempts to debug their own programs.</p>	<p>with other coding structures including variables to achieve the effects that they design in their programs.</p> <ul style="list-style-type: none"> - As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. - Children can make use of user inputs and outputs such as 'print to screen'. 	<p>For example, 'if' statements, repetition and variables.</p> <ul style="list-style-type: none"> - They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. - In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately. 	<p>with the ways the internet can be used to provide different methods of communication is improving.</p>
Year Five	<ul style="list-style-type: none"> - Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. - Children are able 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. 	<ul style="list-style-type: none"> - Children can 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. - They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design. 	<ul style="list-style-type: none"> - When children code, they are beginning 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. 	<ul style="list-style-type: none"> - Children understand the value of computer networks but are also aware of the main dangers. - They recognise what personal information is and can explain how this can be kept safe. - Children can select the most appropriate form of online communications contingent on audience and digital content, e.g. blogging, email and online display boards.
Year Six	<ul style="list-style-type: none"> - Children are able 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. - Children 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. 	<ul style="list-style-type: none"> - Children 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. - Coding displays an improving understanding of 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. 	<ul style="list-style-type: none"> - Children are able 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. 	<ul style="list-style-type: none"> - Children understand and can explain in some depth the difference between the internet and the World Wide Web. - Children know what a WAN and LAN are and can describe how they access the internet in school.

Key Stage Two – Digital Literacy – See separate Online Safety Progression of Skills.