

St. Margaret's C.E. Junior School Progression of Skills & Knowledge in Computing 2022-23

	Year 5 Concepts	Year 6 Concepts
Computer Systems & Networks	<p><u>Systems & Searching</u></p> <ul style="list-style-type: none"> Describe that a computer system features inputs, processes, and outputs Explain that computer systems communicate with other devices and built using a number of parts Know tasks that are managed by computer systems and human elements of a computer system Compare results from different search engines Use a web search to find specific information and refine a web search Recognise the role of web crawlers in creating an index Relate a search term to the search engine's index Know that a search engine follows rules to rank results Give examples of criteria used by search engines to rank results Describe some of the ways that search results can be influenced Explain how search engines make money Know some of the limitations of search engines 	<p><u>Communication and Collaboration</u></p> <ul style="list-style-type: none"> Know computers use addresses to access websites Know that internet devices have addresses Know that data is transferred using agreed methods Know that all data transferred over the internet is in packets and identify the main parts Know data is transferred over networks in packets Explain that the internet allows different media to be shared Access shared files stored online and send information over the internet in different ways Know how the internet enables effective collaboration and can be public or private Choose methods of communication to suit particular purposes* Compare/use different methods of communicating on the internet* Know when and when not to share information online*
Programming	<p><u>Selection in Physical Computing (Programming A)</u></p> <ul style="list-style-type: none"> Create a simple circuit and connect it to a microcontroller Explain what an infinite loop does Program a microcontroller to make an LED switch on Design and use sequences that are count-controlled loops Design a conditional loop Know that a condition is either true or false Program a microcontroller to respond to an input Know that a condition being met can start an action Use selection (an 'if...then...' statement) to direct the flow of a program Describe what my project will do Know a real-world example of a condition starting an action Test and debug my project Use selection to produce an intended outcome Write an algorithm that describes what my model will do <p><u>Selection In Quizzes (Programming B)</u></p> <ul style="list-style-type: none"> Identify and modify conditions in a program Know how conditions are used in selection Create a program with different outcomes using selection Know the condition and outcomes in an 'if... then... else...' statement Use selection in an infinite loop to check a condition Explain how selection directs the flow of a program Design a project that uses selection Create and test a program which uses selection Identify how the project could be improved 	<p><u>Variables in games (Programming A)</u></p> <ul style="list-style-type: none"> Know that the way a variable change can be defined Identify examples of information that is variable Identify that variables can hold numbers or letters Know a variable has a name and a value Identify a program variable as a placeholder in memory for a single value Recognise that the value of a variable can be changed Know where in a program to change a variable Use of an event in a program to set a variable Create algorithms for my project and explain my design choices Choose a name that identifies the role of a variable Test and debug the code Evaluate and extend project <p><u>Sensing movement (Programming B)</u></p> <ul style="list-style-type: none"> Apply my knowledge of programming to a new environment Test a program on an emulator - transfer to a controllable device Determine the flow of a program using selection Identify examples of conditions in the real world Use a variable in an if, then, else statement to select the flow of a program Know that checking a variable doesn't change its value Use a condition to change a variable Know the importance of the order of conditions in else, if statements Modify a program to achieve a different outcome Use an operand (e.g. <=>) in an if, then statement Design the algorithm for my project including variables Design the program flow for my project Create a program based on my design Test a program against the design Use a range of approaches to find and fix bugs

Creating Media	<p><u>Video Production</u></p> <ul style="list-style-type: none"> • Compare features in different videos • Know features of videos • Use different camera angles • Identify and find features on a digital video recording device • Capture video using a range of filming techniques • Review how effective my video is • Use filming techniques for a given purpose • Create and save video content • Improve a video by reshooting and editing • Select the correct tools to make edits to my video • Store retrieve, and export my recording to a computer • Evaluate video • Make edits to my video and improve the final outcome • Know how edits will impact on the quality of the final outcome <p><u>Introduction to Vector Graphics</u></p> <ul style="list-style-type: none"> • Know how vector drawings are different from paper-based drawings • Recognise that vector drawings are made using shapes • Explain that each element added to a vector drawing is an object • Move, resize, and rotate objects I have duplicated use zoom tool for detail • Know how alignment grids and resize handles can be used to improve consistency • Use layering to create an image • Copy part of a drawing by duplicating several objects • Know when I need to group and ungroup objects • Reuse a group of objects to further develop my vector drawing • Compare vector drawings to freehand paint drawings • Create a vector drawing for a specific purpose 	<p><u>3D Modelling</u></p> <ul style="list-style-type: none"> • Add 3D shapes to a project • Move 3D shapes relative to one another and view from different perspectives • Modify lift/lower, recolour and resize 3D objects • Duplicate, rotate and group 3D objects • Accurately size 3D objects • Combine a number of 3D objects • Use placeholders to create holes in 3D objects • Analyse a 3D model • Choose and combine objects to use in a 3D model • Construct a 3D model based on a design • Evaluate and modify 3D model to improve it <p><u>Webpage Creation</u></p> <ul style="list-style-type: none"> • Know that websites are written in HTML • Draw a web page layout that suits my purpose • Know the common features of a web page including media • Find and use copyright-free images • Understand copyright and 'fair-use' • Add content to a web page • Evaluate web page on different devices and suggest/make edits • Know what a navigation path is • Make multiple web pages and link them using hyperlinks • Create hyperlinks to link to other people's work • Evaluate the user experience of a website • Know the implication of linking to content owned by other
Data& Information	<p><u>Flat-file Databases</u></p> <ul style="list-style-type: none"> • Create a database using cards • Explain how information can be recorded • Order, sort, and group data cards • Know what a field is and a record is in a database • Navigate a flat-file database to compare different views of information • Combine grouping and sorting to answer specific questions • Know data can be grouped using chosen values and group information using a database • Use multiple criteria to answer a given question • Choose which field and value are required to answer a given question • Know how 'AND' and 'OR' can be used to refine data selection • Know the benefits of using a computer to create charts • Refine a chart by selecting a particular filter • Use a real-world database to answers questions 	<p><u>Spreadsheets</u></p> <ul style="list-style-type: none"> • Enter data into a spreadsheet • Apply an appropriate format to a cell • Construct a formula in a spreadsheet • Know data types can be used in calculations • Know that changing inputs changes outputs • Apply a formula to multiple cells by duplicating it • Calculate data using different operations • Create a formula which includes a range of cells • Apply a formula to calculate the data I need to answer questions • Use a spreadsheet to answer questions • Create a chart • Identify when to use a table or chart • Use a chart to show the answer to questions
Online Safety	<p><u>Online Reputation</u></p> <ul style="list-style-type: none"> • Know what should and shouldn't be shared online • Know that the information I find online may not be accurate and that people make judgements based on this information <p><u>Apps</u></p> <ul style="list-style-type: none"> • Know what in-app purchasing is • Know the benefits and risks of in-app purchasing 	<p><u>Fake Profiles & Online Relationships</u></p> <ul style="list-style-type: none"> • Know how to report concerns and how I would support others • Know how sharing something online may have an impact either positively or negatively • Know impulsive and rash communications online may cause problems • Recognise issues online that might make me or others feel sad, worried, uncomfortable or frightened • Know that online others can pretend to be someone else including fake profiles

