

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

	Year 3 Concepts	Year 4 Concepts
Computer Systems & Networks	<p>Connecting Computers</p> <ul style="list-style-type: none"> Classify input and output devices and describe a simple process Explain how I use digital devices for different activities Recognise similarities and differences between using digital devices and non-digital tools Know how messages are passed through multiple connections Know the role of a switch, server, and wireless access point in a network Recognise that a computer network is made up of a number of devices Identify how devices in a network are connected together Identify networked devices around me Identify the benefits of computer networks 	<p>The Internet</p> <ul style="list-style-type: none"> Know how information is shared across the internet Know the internet as a network of networks Know networked devices and how they connect Know that the World Wide Web contains websites, web pages and media Know where websites are stored when uploaded to the WWW Explain that internet services can be used to create content online Explain that there are rules to protect content* Explain that websites and their content are created by people* Know that not everything on the World Wide Web is true* Know why I need to think carefully before I share or reshare content* Explain why some information I find online may not be honest, accurate, or legal*
Programming	<p>Sequencing Sounds</p> <ul style="list-style-type: none"> Know the objects in a Scratch project (sprites, backdrops) and they have attributes (linked to) Know that commands in Scratch are represented as blocks Create a program following a design Know that each sprite is controlled by the commands I choose Create a sequence of connected commands Combine sound commands Explain what a sequence is Order notes into a sequence Implement my algorithm as code <p>Events and actions in programs (Programming B)</p> <ul style="list-style-type: none"> Know the relationship between an event and an action Identify a way to improve a program Program movement Use a programming extension Choose sequences of commands to make my design work Use suitable keys to turn on additional features Identify and fix bugs Evaluate and improve maze game 	<p>Repetition in Shapes</p> <ul style="list-style-type: none"> Create a code snippet for a given purpose Explain the effect of changing a value of a command Test an algorithm in a text-based language and write an algorithm to produce a given outcome Identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves Identify patterns in a sequence Use a count-controlled loop to produce a given outcome Choose which values to change in a loop and identify the effect of changing times task repeated Predict the outcome of a program containing a count-controlled loop Know that a computer can repeatedly call a procedure Decompose tasks in to small steps Use a procedure in a program Design a program that includes count-controlled loops Develop a program by debugging it <p>Repetition in Games (Programming B)</p> <ul style="list-style-type: none"> Know an everyday task as a set of instructions including repetition Modify a snippet of code to create a given outcome Predict the outcome of a snippet of code Know when to use a count-controlled and an infinite loop Modify loops to produce a given outcome Design code that includes two or more loops which run at the same time Modify an infinite loop Evaluate and design a project that includes repetition Create project and evaluate/refine algorithm
Creating Media	<p>Desktop Publishing</p> <ul style="list-style-type: none"> Explain the difference between text and images Identify the advantages and disadvantages of using text and images Know that text and images can communicate messages clearly Change font style, size, and colours for a given purpose Know that text can be changed to communicate more clearly 	<p>Audio Production</p> <ul style="list-style-type: none"> Explain that the person who records the sound can say who is allowed to use it Identify the input and output devices used to record and play sound Use a computer to record audio Know what sounds can be added to a podcast Inspect the soundwave view to know where to trim my recording Re-record my voice to improve my recording

	<ul style="list-style-type: none"> • Create a template for a particular purpose • Recognise placeholders and say why they are important • Make effective changes to content • Paste text and images to create a magazine cover • Choose a suitable layout for a given purpose • Identify different layouts and match a layout to a purpose • Compare work made on desktop publishing to work created by hand • Know the uses of desktop publishing in the real world • Know why desktop publishing might be helpful 	<ul style="list-style-type: none"> • Explain how sounds can be combined to make a podcast more engaging • Plan appropriate content for a podcast • Save project so the different parts remain editable • Record content and review its quality • Arrange multiple sounds for a purpose • Explain the difference between saving a project and exporting an audio file • Listen to an audio recording to identify its strengths and suggest improvements <p>Photo Editing</p> <ul style="list-style-type: none"> • Explain why I might crop an image and why photos might be edited • Improve an image by rotating it • Use photo editing software to crop an image • Use and explain that different colour effects make you think and feel different things • Add to the composition of an image by cloning • Know how a photo edit can be improved • Remove parts of an image using cloning • Use tools to select and copy part of an image • Use a range of tools to copy between images • Choose suitable images for a purpose • Create a project that is a combination of other images • Combine text and my image to complete a project • Review images use feedback to guide making changes
Data & Information	<p>Branching Databases</p> <ul style="list-style-type: none"> • Create two groups of objects separated by one attribute • Recognise and create closed questions • Know the attributes needed to collect data about an object • Create and test a branching database • Compare and evaluate two branching database structures • Explain that questions need to be ordered carefully to split objects into similarly sized groups • Create a physical version of a branching database • Create questions that will enable objects to be uniquely identified • Independently create questions to use in a branching database • Create a branching database that reflects my plan • Know real-world uses for branching databases 	<p>Data Logging</p> <ul style="list-style-type: none"> • Choose a data set to answer a given question • Know data that can be gathered over time • Explain what data can be collected using sensors • Know data from sensors can be recorded • Use data from a sensor to answer a given question • Identify the intervals used to collect data • Recognise that a data logger collects data at given points • Sort data to find information • View data at different levels of detail • Plan how to collect data using a data logger • Propose a question that can be answered using logged data • Use a data logger to collect data: draw conclusions from the data that I have collected • Interpret data that has been collected using a data logger
Online Safety	<p>SMART Rules</p> <ul style="list-style-type: none"> • Know and understand the SMART rules <p>Web Research</p> <ul style="list-style-type: none"> • Know that not all internet 'content' is free to use • Know what auto-complete is • Know that auto-complete is not always truthful <p>*See 'Online Safety' documents for additional PSRHE content</p>	<p>Security and Privacy Password Safety</p> <ul style="list-style-type: none"> • Create safe passwords and remember to keep them safe. • Identify a range of potential online risks • Can explain SMART rules and how they should be used • Know how to seek support for reporting concerns • Know SMART rules • Know the importance of secure passwords • Know how monitoring services are used to keep children and users safe online

