St Mark's C of E
Medium Term Planning - Cycle B
Computing

Predominant Area of Computing		
Computer Science	**Information Technology**	**Digital Literacy**

Year: 1/2

Unit Focus: **Introduction to quizzes**

NC Objectives:

- 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
- use technology purposefully to create, organise, store, manipulate and retrieve digital content

	Learning Objective What is being learned rather than what is being done	**Resources** Links to resources.	**End-point knowledge** What knowledge should children have gained by the end of the lesson – this will be the focus of retrieval
1	L.O. To understand that a program needs to be started **Teach Computing**	ScratchJnr	**Vocabulary: sequence, command** • I can identify the start of a sequence • I can identify that a program needs to be started • I can show how to run my program
2	L.O. To understand program outcomes **Teach Computing**	Activity sheets ScratchJnr	**Vocabulary: predict, outcome** • I can predict the outcome of a sequence of commands • I can match two sequences with the same outcome • I can change the outcome of a sequence of commands

3	L.O. To create a program using a given design **Teach Computing**	Activity sheets ScratchJnr	**Vocabulary: sprite, design** • I can work out the actions of a sprite in an algorithm • I can decide which blocks to use to meet the design • I can build the sequences of blocks I need
4	L.O. To change a given design **Teach Computing**	Activity sheets ScratchJnr	**Vocabulary: modify, actions.** • I can choose backgrounds for the design • I can choose characters for the design • I can create a program based on the new design
5	L.O. To create a program using my own design **Teach Computing**	ScratchJnr	**Vocabulary: algorithm, build, sequence** • I can choose the images for my own design • I can create an algorithm • I can build sequences of blocks to match my design
6	L.O. To evaluate my design **Teach Computing**	ScratchJnr	**Vocabulary: compare, debug, evaluate** • I can compare my project to my design • I can improve my project by adding features • I can debug my program

Year: 3/4

Unit Focus: **Coding**

NC Objectives:
- •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

	Learning Objective What is being learned rather than what is being done	**Resources** Links to resources.	**End-point knowledge** What knowledge should children have gained by the end of the lesson – this will be the focus of retrieval
1	L.O. To create a simple computer program. **4.1 PM**	Chromebooks/ Laptops PM – Free Code Gibbon	**Complete the vocabulary quiz as a class to discuss new and previous vocabulary.** **Purple Mash by 2Simple** • Children can explore different object types in 2Code. • Children can use a background and objects to create a scene. • Children can plan an algorithm for their scene and use 2Code to program it.
2	L.O. To create a program that includes 'if statements' **4.1 PM**	Chromebooks/ Laptops PM - Lost 2Code	**Vocabulary – selection + any more that were identified in week 1** • Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement.
3	L.O. To understand how to use co-ordinates **4.1 PM**	Chromebooks/ Laptops PM – Guard the castle	**Vocabulary: co-ordinates** • Children can make use of the X and Y attributes of objects in their coding. • Children can create a program that includes an IF statement.

4	L.O. To understand the 'repeat until' command. **4.1 PM**	Chromebooks/ Laptops PM – Free Code Gibbon PM – Riginald Rocket 2code example	**Vocabulary: command, flow chart** • Children can interpret a flowchart that depicts an IF/ ELSE statement. • Children can read code that includes Repeat Until and IF/ ELSE and explain how it works. • Children can create a program that includes an IF/ ELSE statement.
5	L.O. To understand the term 'variable' in programming. **4.1 PM**	Chromebooks/ Laptops PM - Genie	**Vocabulary: variable** • Children can explain what a variable is in programming. • Children can create and use variables when programming.
6	L.O. To design and make a game with a score **4.1 PM**	Chromebooks/ Laptops PM – Free Code Gibbon	**Vocabulary: design – code – test- debug process** • Children can use the correct code to make their game work. • Children can explain how their code makes their game work.

Year: 5/6

Unit Focus: **Modelling**

NC Objectives:

- 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
- 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

	Learning Objective What is being learned rather than what is being done	**Resources** Links to resources.	**End-point knowledge** What knowledge should children have gained by the end of the lesson – this will be the focus of retrieval
1	To understand the 2Design and make tool **5.6 3D Modelling**	Laptops PM – 2Design and Make	**Vocabulary: NET view, 3D** • Children know what the 2Design and Make tool is for. • Children can explore the different viewpoints in 2Design and Make whilst designing a building.
2	L.O. To explore the effects of moving points when designing **5.6 3D Modelling**	Laptops PM – 2Design and Make	**Vocabulary: moving points, alter, form** • Children can adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form.
3	L.O. To design a 3D model to a criteria **5.6 3D Modelling**	Laptops PM – 2Design and Make	• Children can explore how to edit the polygon 3D models to design a 3D model for a purpose.

4 & 5	L.O. To refine and print a model **5.6 3D Modelling**	Laptops PM – 2Design and Make	• Children can refine one of their designs to prepare it for printing. • Children can print their design as a 2D net and then created a 3D model. Children can print the net of their model and then add colour and detail.