St Mark's C of E Primary School: Medium Term Planning

Computing: Cycle B Autumn Term

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

KS1

Unit Focus: **Robot Algorithms** (Teach Computing)

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

	Learning Objective What is being learned rather than what is being done	Resources Any 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 activities and monitoring.
1	**LO: To describe a series of instructions as a sequence**	Optional Sheet	**Vocabulary: instruction, sequence, clear, unambiguous, algorithm, program** I can predict the outcome of a command on a device. I can match a command to an outcome. I can run a command on a device.
2	**LO: To explain what happens when we change the order of instructions**	Handouts in Folder	**Vocabulary: Sequence, order, algorithm, instruction** I can show the difference in outcomes between two sequences that consist of the same commands. I can use an algorithm to program a sequence on a floor robot. I can use the same instructions to create different algorithms.
3	**LO: To use logical reasoning to predict the outcome of a program**	Handouts Maps from Lesson 2 Bee Bots	**Vocabulary: Sequence, prediction, program** I can compare my prediction to the program outcome. I can follow a sequence. I can predict the outcome of a sequence.
4	**LO: To explain that programming projects can have code and artwork**	Handouts for map Large paper (Keep maps for next lesson)	**Vocabulary: artwork, design, route, mat** I can explain the choices I made for my mat design. I can identify different routes around my mat. I can test my mat to make sure that it is usable.

5	**LO: To design an algorithm**	Maps from previous lesson. Bee Bots	**Vocabulary: algorithm** I can create an algorithm to meet my goal. I can explain what my algorithm should achieve. I can use my algorithm to create a program.
6	**LO: To create and debug a program that I have written**	Activity Sheets D Floor robots Mats and obstacles from Lessons 4 and 5	**Vocabulary: debugging, algorithm, program, decomposition** I can plan algorithms for different parts of a task. I can put together the different parts of my program. I can test and debug each part of the program.

LKS2

Unit Focus: **Effective Searching (Purple Mash)**

NC Objectives:

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

	Learning Objective What is being learned rather than what is being done	**Resources** Any 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 activities and monitoring.
1	**LO: To locate information on the search results page.**	Internet Recap Quiz Worksheet . Chromebooks/ Laptops	**Vocabulary: search engine, results page, internet** Children can structure search queries to locate specific information
2	**LO: To use search effectively to find out information.**	Internet Recap Quiz Worksheet Chromebooks/Laptops	**Vocabulary: search engine, results page, internet, key words** Children have written search questions for a friend to solve.
3	**LO: To assess whether an information source is true and reliable.**	Information Cards Chromebooks/ Laptops	**Vocabulary: search engine, results page, internet, key words, Easter eggs, reliability** Children can analyse the contents of a web page for clues about the credibility of the information.

Unit Focus: **Hardware Investigations (Purple Mash)**

NC Objectives:

- Children can name the different parts of a desktop computer.
- Children know what the function of the different parts of a computer is.
- Children have created a leaflet to show the function of computer parts

	Learning Objective What is being learned rather than what is being done	**Resources** Any 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 activities and monitoring.
1	**LO: To understand the different parts that make up a desktop computer**	Chromebooks/ Laptops (Maybe visit the school office to see desktop computers).	**Vocabulary: hardware, components, motherboard, software, peripherals, CPU** Children can name the different parts of a desktop computer. Children know what the function of the different parts of a computer is.

2	**LO: To recall the different parts that make up a computer.**	Chromebooks/ Laptops (Maybe visit the school office to see desktop computers). Speak to L Weaver, as he may have parts for you to borrow, so the children can look closely.	**Vocabulary: RAM, hard drive, graphics card. network card, input, output** Children can name the different parts of a desktop computer. Children know what the function of the different parts of a computer is.

UKS2

Unit Focus: **Digital Science – Variables in Games (Teach Computing)**

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
- 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
- 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	**LO: To define a 'variable' as something that is changeable**	Activity Sheets Chromebooks/ Laptops Scratch	**Vocabulary: variable, change, name, value** I can identify examples of information that is variable. I can explain that the way a variable changes can be defined. I can identify that variables can hold numbers or letters.
2	**LO: To explain why a variable is used in a program**	Handouts Chromebooks/ Laptops Scratch	**Vocabulary: variable, name, value, set, change** I can identify a program variable as a placeholder in memory for a single value. I can explain that a variable has a name and a value. I can recognise that the value of a variable can be changed.
3	**LO: To choose how to improve a game by using variables**	Activity Sheets Chromebooks/ Laptops Scratch	**Vocabulary: variable, set, change, design, event** I can decide where in a program to change a variable. I can make use of an event in a program to set a variable. I can recognise that the value of a variable can be used by a program.
4	**LO: To design a project that builds on a given example**	Activity Sheets Chromebooks/ Laptops Scratch	**Vocabulary: design, algorithm, code** I can choose the artwork for my project. I can create algorithms for my project. I can explain my design choices.

5.	**LO: To use my design to create a project**	Activity Sheets Chromebooks/ Laptops Scratch	**Vocabulary: algorithm, design, artwork, program, project, code, test, debug** I can create the artwork for my project. I can choose a name that identifies the role of a variable. I can test the code that I have written.
6.	**LO: To evaluate my project**	Activity Sheets Chromebooks/ Laptops Scratch	**Vocabulary: improve, evaluate, share** I can identify ways that my game could be improved. I can use variables to extend my game. I can share my game with others.