Computing Learning Sequence Document - Year 5/6 - 2022/2023

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Communication and collaboration (6.1)	Selection in Physical computing (5.3)	Selection in quizzes (5.6)	Variables in games (6.3)	Sensing (6.6)	Creating media – 3D modelling (6.5)
Learning Outcomes	Identifying and exploring how data is transferred and information is shared online.	Exploring conditions and selection using a programmable microcontroller.	Exploring selection in programming to design and code an interactive quiz.	Exploring variables when designing and coding a game.	Designing and coding a project that captures inputs from a physical device.	Planning, developing, and evaluating 3D computer models of physical objects.
Science Knowledge NC Focus:	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
Prior learning:	Connecting computers (3.1) The Internet (4.1) Staying safe online	Repetition in games (4.6)	Selection in Physical computing (5.3)	Selection in quizzes (5.6)	Variables in games (6.3)	
Sequence of learning:	To identify how to use a search engine	To control a simple circuit connected to a computer	To explain how selection is used in computer programs	To define a 'variable' as something that is changeable	To create a program to run on a controllable device	To use a computer to create and manipulate three-dimensional (3D) digital objects
	To describe how search engines select results	To write a program that includes count-controlled loops	To relate that a conditional statement connects a condition to an outcome	To explain why a variable is used in a program	To explain that selection can control the flow of a program	To compare working digitally with 2D and 3D graphics
	To explain how search results are ranked	To explain that a loop can stop when a condition is met	To explain how selection directs the flow of a program	To choose how to improve a game by using variables	To update a variable with a user input	To construct a digital 3D model of a physical object
	To recognise why the order of results is important, and to whom	To explain that a loop can be used to repeatedly check whether a condition has been met	To design a program which uses selection	To design a project that builds on a given example	To use a conditional statement to compare a variable to a value	To identify that physical objects can be broken down into a collection of 3D shapes
	To recognise how we communicate using technology	To design a physical project that includes selection	To create a program which uses selection	To use my design to create a project	To design a project that uses inputs and outputs on a controllable device	To design a digital model by combining 3D objects

	To evaluate different methods of online communication	To create a program that controls a physical computing project	To evaluate my program	To evaluate my project	To develop a program to use inputs and outputs on a controllable device	To develop and improve a digital 3D model
End Point:	Children will understand how to stay safe in a connected world. Children will recognise how search bias can alter results gained from internet searches and why this is.	Children will create a programme that controls a physical system.	Children will design an interactive quiz.	Children will design and build a game.	Children will create a programme that controls a physical system.	Children will design a 3d object that is capable of manufacture.
Class topic	Climate, temperature, habitat and eco systems	Climate, temperature, habitat and eco systems	Dynamic Dynasties	Dynamic Dynasties	Ground-breaking Greeks	Ground-breaking Greeks
Suggested link to class topic	Investigate how climate change articles are ranked.	Create a system that could open a greenhouse window	Create an interactive quiz about the dynasty chosen	Build a game based on the dynasty/Greeks	Build a game based on the dynasty/Greeks	Create a 3d model of a Greek temple.