Computing Learning Journey
Year 4 Autumn 1st ½

4.1 We are Software Developers

Developing a simple educational game

Test and improve their game

Develop progression within their game

Improve the interface of their game

Develop the functionality of their game

Create a working prototype of their game

Analyse existing games and identify what makes them effective

Key Vocabulary

Algorithm: a sequence of precise instructions or steps (sometimes a set of rules) to achieve an objective
Bug: an error or mistake in a program or algorithm, causing the computer or robot to behave in a manner that was not originally intended
Debug: correct mistakes in a computer program or algorithm
Input: data supplied to a computer, in this case the algorithm taken from the storyboard for the animation
Output: information produced by a computer, in this case an animation
Program: a sequence of instructions (or sometimes a set of rules) that can be followed by a computer
Repeat loop: a sequence of instructions executed a fixed number of times or until some condition is met, or possibly forever
Repetition: programming construct which allows a group of instructions to be repeated a number of times, or until a certain condition is met
Scratch: simple, block-based programming language in which programs for characters are built by snapping together code blocks
Sequence: placing programming instructions in order, so each one happens one after the other
Sprite: a graphical character in a program that can be given its own sequence of instructions
Variable: lets computer programs store, retrieve or change simple data. Typically thought of as a particular location in the computer's memory that holds a specific item of data

Software: Scratch (alternative: Snap!)
Hardware: Laptop/desktop/Chromebook computers or tablets, microphones (optional)

Online safety:
We respect licence conditions and other people's work when using images and sound effects from the internet.
If pupils register for their own scratch accounts they will need their parents' email and parents' permission and supervision.

Switched on Online Safety Unit:
Developing online safety guidelines
Unit 4.1 – We are Year 4 rule writers
Reviewing and editing our online safety rules.

Unit overview:
The children will learn to:
- develop an educational computer game using selection and repetition
- understand and use variables
- start to debug computer programs
- recognise the importance of user interface design, including consideration of input and output.

In Key Stage 1:
Pupils programmed using Blue-Bots in **Unit 1.1: We are treasure hunters.**
They programmed on screen in **Unit 2.1: We are astronauts.**

In Key Stage 2:
- Pupils will build on learning from **Unit 3.1: We are programmers.**
- Pupils will further develop their programming skills in **Unit 4.2: We are makers** and **Unit 5.1: We are game developers**