**Scratch and where it could be used within the Curriculum**

**ICT General Capabilities**

**Foundation**

Maths

* use computer software to draw a closed shape, colouring in the area.
* make representations of two-dimensional shapes using a variety of materials, including paint, paper, body movements and computer drawing tools
* direct simple computer-controlled toys and equipment to follow a path

**Stage 1**

Maths

* copy and manipulate a shape using the computer functions for slide and flip
* copy and manipulate a shape using the computer function for turn
* create a path from one location to another using computer software
* draw and name two-dimensional shapes in different orientations, with and without the use of digital technologies

Science/Technology

* interact with an information source or technology to explore the ways that different forms of information are combined, including text, image and sound, eg a website or digital game

English

* develop an awareness of issues relating to the responsible use of digital communication
* experiment with publishing using different modes and media to enhance planned presentations
* construct texts featuring print, visual and audio elements using software, including word processing programs
* recreate texts imaginatively using drawing, writing, performance and digital forms of communication.

**Stage 2**

Maths

* use digital technologies to create tessellating designs
* use digital technologies involving maps, position and paths

English

* identify features of online texts that enhance readability including text, navigation, links, graphics and layout
* use visual representations, including those digitally produced, to represent ideas, experience and information for different purposes.

Science/Technology

* use common digital technologies and applications to organise and communicate information for a specific task, eg word processing and digital presentation software

**Stage 3**

Maths

* select and apply appropriate mental and written strategies, with and without the use of digital technologies, to solve unfamiliar problems.
* rotate a graphic or object through a specified angle about a particular point, including by using the rotate function in a computer drawing program
* making enlargements of two-dimensional shapes, pictures and maps, with and without the use of digital technologies.
* construct patterns of two-dimensional shapes that involve translations, reflections and rotations using computer software

English

* Use a range of software, including word processing programs, learning new functions as required to createtexts.
* plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis
* recognise the effect of multimedia elements, eg film techniques, animation, voice-overs, sound effects, framing, close-ups

Science/Technology

* explore how information and communication systems can be used to exchange ideas, collaborate with others, organise and present data, eg a database, spreadsheet and multimedia designs

**Stage 4**

English

* use a range of software, including word processing programs, to create, edit and publish texts imaginatively

**Draft Digital Technologies Foundation to Year 10 Scope and Sequence**

**Digital Technologies processes and production skills**

**Using digital systems**

Years F-2

* 2.4 Identify, explore, and use digital systems (hardware and software components) for personal and classroom needs.

Years 3-4

* 4.4 Use a range of digital systems and peripherals for diverse purposes, and transmit different types of data

**Specification, algorithms and implementation**

Years F-2

* 2.5 Follow, describe, represent and play with a sequence of steps and decisions needed to solve simple problems

Years 3-4

* 4.5 Define simple problems, and follow and describe the algorithms (sequence of steps and decisions) needed to solve them
* 4.6 Design and implements simple visual programs with user input and branching

Years 5-6

* 6.5 Define problems in terms of data and functional requirements, and describe common characteristics and elements of similar problems
* 6.6 Follow, modify and describe simple algorithms involving sequence of steps, decisions and repetitions that are represented diagrammatically and in plain English
* 6.7 Design and implement digital solutions using visual programs with user input, branching and iteration

Years 7-8

* 8.8 Trace algorithms to predict output for a given input and to identify errors, and describe algorithms diagrammatically and in plain English
* 8.9 Develop and modify programs with user interfaces involving branching, repetition or iteration and subprograms in a general-purpose programming language
* 8.10 Manage the sequence of tasks, the types of processes and the resources needed to develop software that meets user requirements.

Years 9-10

* 10.8 Trace complex algorithms to predict output for a given input, develop test cases to validate algorithms against their specifications, and describe algorithms diagrammatically and in plain English
* 10.9 Collaboratively develop modular digital solutions, applying appropriate algorithms and data structures using visual, object-oriented and/or scripting tools and environments