Seaton Sluice Middle School

SSMS Computing Curriculum Overview

***KS2 Main Aims:** The objectives below indicate the learning objectives for pupils, split into three learning areas of Computing Science, Information Technology and Digital Literacy.*

Computer Science

CS2.1 Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
CS2.2 Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
CS2.3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
CS2.4 Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web.
CS2.5 Appreciate how [search] results are selected and ranked.

Information Technology

IT2.1 Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of content which accomplishes given goals, including collecting, analysing, evaluating and presenting data and information.
IT2.2 Use search technologies effectively.

Digital Literacy

DL2.1 Understand the opportunities networks offer for communication and collaboration.
DL2.2 Be discerning in evaluating digital content.
DL2.3 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year 5

	Autumn	Spring	Summer
1	Basic Network Skills *(DL2.1)*	Cryptography *(DL2.1, DL2.3, CS2.3, CS2.4)*	Spreadsheets - Basic Formula *(IT2.1)*
2	E-Safety *(DL2.2,DL2.3)*	Game Development *(CS2.1, CS2.2, CS2.3, IT2.1)*	Virtual Design *(IT2.1, IT2.2)*

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Year 6			
	Autumn	**Spring**	**Summer**
1	Publishing and Network Communication *(CS2.1, CS2.4, IT2.1, IT2.2, DL2.1, DL2.3)*	Spreadsheet Modelling *(CS2.1, IT2.1)*	Internet, Email and E-Safety *(CS2.4, CS2.5, IT2.2, DL2.2, DL2.3)*
2	Scratch *(CS2.1, CS2.2, CS2.3)*	Presentations and Collaborating Online *(IT2.1, CS2.4, DL2.3)*	Sensing and Variables *(CS2.1,CS2.2, CS2.3, IT2.1)*

KS3 Main Aims: ***The objectives below indicate the learning objectives for pupils, split into three learning areas of Computing Science, Information Technology and Digital Literacy.***

Computer Science

CS3.1 Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems.

CS3.2 Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem.

CS3.3 Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions.

CS3.4 Understand simple Boolean logic and some of its uses in programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example binary addition, and conversion between binary and decimal].

CS3.5 Understand how instructions are stored within a computer system in the form of binary digits.

Information Technology

IT3.1 Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits.

IT3.2 Understand the hardware and software components that make up computer systems, how they communicate with one another and with other systems.

IT3.3 Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally.

IT3.4 Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users.

Digital Literacy

DL3.1 Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability.

DL3.2 Understanding a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

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Year 7			
	Autumn	**Spring**	**Summer**
1	E-Safety & Podcasting *(CS3.2, DL3.2)*	3D Design CAD *(IT2.4, DL3.1)*	Creating animations and Game Design *(IT3.4, CS3.2, CS3.3)*
2	Searching for Information and Presentations *(DL2.3, CS3.1)*	Drawing and Manipulating Shapes *(IT3.3, CS3.2, CS3.4, CS3.5)*	
Year 8			
	Autumn	**Spring**	**Summer**
1	Computing Components, Binary and the History of Computing *(CS3.4, CS3.5, IT3.1, IT 3.2)*	Spreadsheet Modelling and Careers in Computing. *(DL3.1)*	App Design and the Ethics of Computing *(CS 3.1, CS3.2, CS3.3, DL3.1, DL3.2)*
2	Website Creation, HTML and CSS *(CS3.1, CS3.3)*	E-Safety and Computational Thinking *(CS3.2, DL3.2)*	Python Programming *(CS3.1, CS3.2, CS3.3, CS3.5)*