



## Computer Science KS3 Curriculum Map

### Aims and Rationale:

The aims and rationale of the curriculum in Years 7 to 9 in Computer Science are to equip students with the skills to participate in a rapidly changing world. The purpose of the curriculum is to prepare students for GCSE Computing as well as for the digital world we live in. Students will understand the fundamental principles of Computer Science by having the opportunity to write programs, and design and produce professional digital products. They will learn about computational thinking, how to be safe on the internet and how to protect their computers, as well as logic, algorithms and data representation. Students will be responsible, competent, confident and creative users of information and communication technology equipped for the future, even if they are not taking GCSE Computing.

Year 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Content: What will students know</b>	Introduction to how HGS uses the Network; How to use a Chromebook; E-safety	Computational Thinking	How to program in a block editor, e.g. Micro Bits	Micro Bits and Google Sheets	How to use Google Sheets / Modelling	Understanding what computer hardware is
<b>Skills: What will students be able to do</b>	Navigate how to use a Chromebook; Learn how to be safe online; Learn how to use email sensibly.  Students will learn about Computational Thinking (abstraction, decomposition & pattern recognition). They will write simple algorithms (pseudocode and flowcharts) using sequence,		Students learn how to write basic programs with the physical Micro Bit as well as using web-based block editing resources.	Students learn how to write basic programs with block editing using Micro Bits.	Students will use Google Sheets to learn how to use basic formulas, and complex functions work. How to format, how to create charts and model a scenario.	Students will learn how input and output devices work with the CPU. They will understand how the CPU works and what storage is, as well as the term



	selection and iteration. They will understand and create sub-programs.					Binary and how this works with the CPU.
<b>Other: Literacy/ Numeracy/ Ethos</b>	Links with form tutors - how to be safe online in and out of school. Key vocabulary	Logic, correct symbols, spelling, key vocabulary	Computational logic	Computational logic	Maths skills: adding, subtracting and percentages	Binary (Base 2) speed measured in hertz
<b>Assessment:</b>	MCQ Assessment	Written assessment on Computational Thinking	MCQ & practical assessment	Students will create a program that demonstrates the key skills learned	Google Sheet skills assessment - Teddy Tots	MCQ assessment, followed by a written exam for the end-of-year assessment

Year 8	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Content: What will students know</b>	How to use the school Network, how to be safe online  Data Representation	Data Representation  Photoshop	Use Game Maker to create a game for a specific audience	Use Game Maker to create a game for a specific audience	Networks and how they work	Introduction to Python (text-based language)



<b>Skills: What will students be able to do</b>	Binary / Denary / Conversions  Students learn how images are represented	Use layers to enhance a piece of work, use images and cut effectively  Use text and text effects	Plan a game for a chosen target audience. Students will use Game Maker to design assets to meet a brief; they will also test and evaluate the game they produced.	Understand what networks and protocols are / networking hardware / wired and wireless	Write short programs that use sequence and selection	
<b>Other: Literacy/ Numeracy/ Ethos</b>	Maths: Base 10 (decimal) and Base 2 (binary)	Maths - page layout, Bitmap and vector images	Coordinates of objects / angles	Key vocabulary	Literacy	Key vocabulary
<b>Assessment:</b>	Written assessment and MCQ	Poster and evaluation	Assets (production) Evaluation (written)	MCQ assessment	MCQ assessment	MCQ assessment and end-of-year assessment

Year 9	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Content: What will students know</b>	Learn how to program using Python (text-based programming)	Data Representation	Introduction to Cyber Security	Google Sites	Google Sites and Google Skills	Google Skills
<b>Skills: What will students be able to do</b>	Write text-based programs involving sequence, selection and iteration. Use Python Turtle	Review Binary, Logic Gates and how images are represented	Students will be able to understand how data companies work, explain data	Students will be able to create a Google Site around a given scenario.	Test and evaluate a Google Site.  Google Skills review: Saving to	Students work through relevant Google Skills to aid the next stage of their learning,



	module to draw shapes		protection and learn how different cyber threats affect a network		folders / deleting work / creating a Google Form for feedback	including Google Sheets, folder structure and email etiquette
<b>Other: Literacy/ Numeracy</b>	Keywords Sequence, selection and iteration	Numeracy Base 2, Base 10, colour depth	Use of keywords	Navigation of a Google Site, copyright	Keywords	End-of-year assessment
<b>Assessment:</b>	MCQ – Basics & practical assessment; writing a program using selection or sequence	MCQ assessment and written assessment	MCQ assessment	MCQ assessment	Peer-assess Google Sites using a Google form	End-of-year assessment