

SCHEME OF LEARNING – COMPUTING – YEAR 7

Year 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content	<ul style="list-style-type: none"> Understand how the School VLE works, how to use Microsoft products such as Teams and OneNote and how to complete basic skills on the school Desktop Computers such as File Management <p>Topics studied:</p> <ul style="list-style-type: none"> Microsoft OneNote Microsoft Teams School VLE File Management Logging onto School Computers 	<ul style="list-style-type: none"> Understand the hardware and software components that make up computer systems 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, in the form of binary digits 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] <p>Topics studied:</p> <ul style="list-style-type: none"> Components of a computer and how they work Input and output devices Binary numbers Binary addition 	<ul style="list-style-type: none"> Collecting and analysing data and meeting the needs of known users <p>Topics studied:</p> <ul style="list-style-type: none"> Introduction to spreadsheets Formulae Using functions (SUM, MIN, MAX, Average) Creating graphs and charts IF statements 	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems <p>Topics studied:</p> <ul style="list-style-type: none"> What is computational thinking Decomposition Abstraction Pattern recognition Algorithms 	<ul style="list-style-type: none"> Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems <p>Topics studied:</p> <ul style="list-style-type: none"> Adding terrain Character movement Creating enemy characters Creating a scoring system Autonomous character movement Adding sound effects Using the path tool 	<ul style="list-style-type: none"> 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 <p>Topics studied:</p> <ul style="list-style-type: none"> Print statements Variables User inputs Mathematical operators Data types IF / ELSE / ELIF
Why?	<p>With a big school focus on the student use of iPads it is crucial students have a solid grounding on how to use the School Desktop Computers. The Department also use this Half Term to support the school in giving students an Introduction to using Microsoft Teams and OneNote. Students also spend time ensuring they can locate, save and rename Files in the appropriate area of their students account</p>	<p>This unit is designed to give pupils a grounding in some of the technical concepts of Computing. This will be built upon in future units throughout KS3.</p> <p>There is scope in this unit for some cross curricular activities with the Mathematics department on binary numbers / Hexadecimal (base 16) numbers.</p>	<p>As a department we find that pupils in Year 7 have had limited (if any) exposure to spreadsheets in primary school. This unit is designed to show them how spreadsheets can be used to record, analyse and model data and outcomes.</p> <p>These are skills that can be transferred to other subjects across the school when handling data.</p>	<p>Before pupils start to learn to program effectively we feel it is important that they learn the key skills needed to think like a programmer. By learning these skills it will help pupils break down the challenges they will face when they get to the programming units of study.</p>	<p>This unit is a fairly gentle introduction into programming using Kodu. Students will be able to use the skills they gained in the earlier Computational Thinking unit and apply it to the problem solving they will need to carry out when building their games.</p>	<p>The department believes it is important to introduce text based programming as early as possible to allow pupils to have maximum exposure to it during KS3. As we use Python as the language for the GCSE Computer Science course</p>
Why now?	<p>Sets structure and understanding of personal and professional use of a network and online profile at the beginning of their time in Malton School. This half term also supports other Departments round the school by giving students support with Teams and OneNote</p>	<p>This topic lays the foundation for the computing strand of their studies, letting them explore their understanding of how computers work</p>	<p>This topic lays the foundation for the IT strand of their studies and introduces them to applications for a particular purpose</p>	<p>This topic lays the foundation for decomposition of problems and how to approach problems and to reiterate their approach so that they develop resilience and objectivity as these skills become important as they progress through the school</p>	<p>This topic breaks down programming into its principle parts so it is a good time to introduce it so that they approach upcoming programming projects with a understanding of programming concepts</p>	<p>After KODU programming principles this is the time to introduce text based programming and apply learning from the KODU topic.</p>

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Matrix Reference	AO5B2 AO5D2 AO5S2 AO5E2 AO5M2	AO4B1 AO4D1 AO4S1 AO1B2 AO1D2 AO1S1 AO1E1	AO5B1 AO5D1 AO5S1	AO1B1 AO1D1 AO1S1	AO2B1 AO2D1 AO2S1	AO2B1 AO2D1 AO2S1
Assessments	Microsoft Forms Quiz	2 Factsheets for 2 different target audiences	Create a spreadsheet given a brief	Series of Computational Thinking problems	Make a game in Kodu	Choose your own adventure activity in Python