

Year 8 Computing Curriculum Overview



	What will I learn?	How will I learn it?	Why is it important that I learn this?	Why am I learning this now?
Year 8 HT 1	Networks and the World Wide Web <ul style="list-style-type: none"> Define a network Benefits of networking Networking Transmission Types of Hardware Difference between Internet and WWW 	<p>Practical demonstrations of networks and communications.</p> <p>Case studies - looking at uses of networks</p> <p>Activities and videos.</p> <p>Worksheets on google classroom.</p>	<p>Students need to understand the very importance of networks. As networks have evolved, society has become increasingly reliant on the services that they provide. They have changed the way we learn, work, play, and communicate</p>	<p>This unit progresses students' knowledge and understanding of networks and associated hardware. The unit will establish a foundation understanding of how data is transmitted across networks, as well as exploring the factors that can affect performance. The unit will spend time focusing on the internet and services provided over the internet.</p>
Year 8 HT 2	Programming in Small Basic <p>This unit is an introduction to programming in a textual language. Students will learn the importance of writing statements accurately, documenting their programs and finding out for themselves in a very visual way how different program statements work. They will cover the following:</p> <ul style="list-style-type: none"> Turtle Graphics Variables Loops Computing terms and techniques Input, Output and Selection 	<p>Practical demonstrations and also by exploring the interface of Small Basic and the IntelliSense.</p> <p>The unit starts with the basics for beginners using the Turtle Graphic to draw shapes and follow paths.</p> <p>Worksheets and mini activities will guide the students through this module</p>	<p>This starts the transition from the Graphics style and block style of programming to the text-based programming language.</p> <p>Students will learn the importance of writing statements accurately, documenting their programs and finding out for themselves in a very visual way how different program statements work.</p>	<p>This is the progression from software in Year 7 like Scratch and Kodu and hopefully bridges the gap and prepares students for the Python Language we use in Year 9 and at GCSE level.</p>
Year 8 HT 3	Vector Graphics <p>This unit offers students the opportunity to design graphics using vector graphic editing</p>	<p>Students will use a free open source cross platform application called Inkscape.</p>	<p>This unit helps the students understand one of the main Graphic types they come into contact with.</p> <p>It will underpin some of the work we cover later in the Computing</p>	<p>Graphics are all around us and we use them in all our projects at KS3 to KS5.</p>

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	<p>software. They will use the tools to:</p> <ul style="list-style-type: none"> • Draw basic shapes • Manipulate objects and grouped objects • Draw, edit and combine paths <p>They will also be able to differentiate between Vector and Bitmap graphics and discuss their suitability</p>	<p>They will be set challenges and introduced to the principles of Vector based Graphics</p> <p>Demonstrations and Activities requiring the students to take responsibility for their skill development.</p> <p>Complete an open-ended project using the skills learnt</p> <p>Demonstrate the ability to work with their peers</p>	<p>curriculum and help any student that goes on to study Graphics in the future.</p>	
Year 8 HT 4	<p>Representations from Clay to silicon</p> <p>This unit will encourage students to look back at symbols from History. They will look at different ways that we have communicated information and different sequences including using things like, drums and light.</p> <p>They will eventually be introduced to Binary digits and sequences. They will be required to use some Maths skills to work out binary conversions and how the binary system works.</p> <p>Students will learn about Turing – the father of Computing and be set tasks where they will be required to make conversions and develop an understanding of information and how this is held in bits and bytes.</p>	<p>This will be learnt by looking back at Museum pieces and through working through the ages.</p> <p>Worksheets and both individual and group activities will be included in the sequence of lessons.</p> <p>Students will be required to make conversions and perform calculations converting from binary to denary and back again.</p>	<p>Understanding how data is held on computers is an important aspect of computing. Binary numbers and computer memory are an important aspect of the Computing curriculum.</p> <p>All information held takes up computer memory and knowledge of bits and bytes will be essential.</p>	<p>Students will be using a wide range of software and storing different types of information on media. They will also be sending information across networks. Understanding the relationship between information and the size of files is an important part of the curriculum.</p> <p>Linking the way, we hold information in the digital age compared to past methods and the different communication methods</p>

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Year 8 HT 5	<p>Developing for the Web</p> <p>First part of this unit is learning all about HTML and how web pages are built using tags and then styled using CSS.</p> <p>Students will also learn about search engines and the indexing of pages. They will learn how to search effectively and how the search engines work.</p> <p>Dangers of the web and safety.</p>	<p>Practical tasks using html. Students will have the opportunity to create and edit some web pages using html. They will also apply skills in CSS to change the look and feel of a website.</p> <p>Carrying out searches using different search engines. Practical tasks to improve ability to find information.</p>	<p>Understanding of how websites are built and ensure that students are able to use search engines safely and effectively.</p>	<p>To help the students search and use the web effectively and safely</p>
Year 8 HT 6	<p>Mobile App Development</p> <p>This is a creative unit that gets the students to learn all about Decomposition – breaking problems down.</p> <p>Students will learn all about designing a GUI – Graphical User Interface.</p> <p>Introduced to pair programming and create and code an App. Students will again revisit sequencing and selection in a different coding environment.</p> <p>Coding will be done using a block-based programming language.</p> <p>Debug games and find errors in a program</p>	<p>They will be using Code.org and an application called Game Lab</p> <p>Pair programming and support materials and help sheets</p> <p>Video support from Game Lab and the Oak Academy</p>	<p>Further programming before moving to Text based programming in Year 9.</p>	<p>Reinforcing some of the key fundamentals in programming.</p> <ul style="list-style-type: none"> • Sequencing • Selection • variables