



# Curriculum Plan Key Stage 3

## Computer Science

Academic year: 2020/21		Head of Department: Mr D Chattell ( <a href="mailto:d.chattell@todhigh.co.uk">d.chattell@todhigh.co.uk</a> )	
Term 1			
Year 7	Year 8	Year 9	
<p><b>Collaborating Online Safely</b> This introductory unit will take students on a tour of Office 365 and file saving procedures. They will be shown how to collaborate appropriately through email and social media. Lastly, students will be introduced to some of the dangers of collaborating online.</p> <p><b>Programming Fundamentals</b> In this introductory unit, students will be introduced to the concept of computer programming. They will instruct a BBC Micro:bit to carry out some basic functions using a block-based programming language.</p>	<p><b>Networks</b> Imagine a world without computer networks; there would be no World Wide Web and no sharing of files. Learners will develop an understanding of the terms, 'internet' and 'World Wide Web', and of the key services and protocols used.</p> <p><b>Programming Concepts</b> Students will be making the transition from block-based programming to text-based programming. Using Python programming language, they will have the opportunity to write more complex programmes and experience the language used by professional programmers.</p>	<p><b>Web Design</b> Students will be introduced to more advanced features of Dreamweaver. They will create a fully working website site, using sub-pages and hyperlinking. They will use house styles and templates for a consistent look and feel.</p> <p><b>Algorithms</b> Before programming, there is an algorithm. It is the blueprint to which a programmer works to. Students will explore in more detail the format for writing algorithms.</p>	
Term 2			
Year 7	Year 8	Year 9	
<p><b>Cryptography</b> Students will develop their super spy skills, by deciphering encrypted messages. Students will develop their knowledge of how computers use encryption for secure communication</p> <p><b>Control Systems</b> Students will develop their logical reasoning and problem solving skills by finding solutions to real life problems with the use of algorithms. Using Flowol software, Students create algorithms for a Ferris Wheel, smart home and traffic lights.</p>	<p><b>Web Design</b> Students will be introduced to the web authoring software – Dreamweaver. Students will learn some basic functions of Dreamweaver, including how to create web pages, adding text/ images and general formatting techniques.</p> <p><b>Data Representation</b> This unit conveys essential knowledge relating to binary representations. The activities gradually introduce learners to binary digits and how computers use them to represent text and numbers.</p>	<p><b>Programming Concepts II</b> Students will explore iteration, selection and sequencing in more depth. They will be introduced to while/for loops in order to repeat instructions and data structures like dictionaries, where numerous types of data can be stored</p> <p><b>Media</b> Using a client's brief, Students will be taught the skills of deducing a client's requirements for a digital product. Students will also learn to determine the look and feel of a product, using pre-production documents</p>	
Term 3			
Year 7	Year 8	Year 9	
<p><b>Computer Systems</b> Students will strip down a computer and explore the main internal components. They will then have the opportunity to work in teams and discover the functions of the components; before assembling the computer.</p> <p><b>Graphic Design</b> This is a foundational unit, to prepare students for the succeeding graphical units in year 8 and 9. They will be introduced to a graphics editor and some</p>	<p><b>Computer Systems II</b> Students will be introduced to embedded/general-purpose computer systems, before exploring the internal components of a computer system in more depth. Exploration of components will include: storage/memory and fetch-decode-execute cycle.</p> <p><b>Graphic Design</b> Following on from Graphic Design in Year 7, students will be introduced to other features of the graphics editor, which will allow them to create more complex</p>	<p><b>Data Representation II</b> In this unit, learners will focus on digital media, such as images and sounds, and discover the binary digits that lie beneath these types of media.</p> <p><b>Graphic Design</b> Students will be introduced to more advanced features of the graphics editor. This will allow students to create professional looking digital images.</p>	

basic functions, before completing a mini graphical project.

images. Students will use their skills to create a digital image for potential client.

Students will draw on the client's brief and planning techniques, in order to determine a look and feel.

Homework		
Year 7	Year 8	Year 9
HW is set in accordance with the homework timetable and will be mostly computer based. If a student doesn't have computer facilities at home, paper based documents can be provided or they are welcome to use the classroom facilities. Resources to assist students will be uploaded to Teams on Office 365.	HW is set in accordance with the homework timetable and will be mostly computer based. If a student doesn't have computer facilities at home, paper based documents can be provided or they are welcome to use the classroom facilities. Resources to assist students will be uploaded to Teams on Office 365	HW is set in accordance with the homework timetable and will be mostly computer based. If a student doesn't have computer facilities at home, paper based documents can be provided or they are welcome to use the classroom facilities. Resources to assist students will be uploaded to Teams on Office 365
Assessment		
Year 7	Year 8	Year 9
Students complete formal assessments at the end of each unit of work covering the work covered up to date in that half term and any previous.  The grade used for the data check is an accumulation of the results of these assessments.  Students do at times complete practice assessments, informal assessments or pre-checks to help inform teaching.	Students complete formal assessments at the end of each unit of work covering the work covered up to date in that half term and any previous.  The grade used for the data check is an accumulation of the results of these assessments  Students do at times complete practice assessments, informal assessments or pre-checks to help inform teaching.	Students' complete formal assessments at the end of each unit of work covering the work covered up to date in that half term and any previous.  The grade used for the data check is an accumulation of the results of these assessments  Students do at times complete practice assessments, informal assessments or pre-checks to help inform teaching.