

Year 8 Computing

Topic Overview 2021-22

Autumn Term	
Topic 1	Digital Literacy
Topic 2	What is a Computer?
Spring Term	
Topic 1	How do Computers Communicate?
Topic 2	Data Representation
Summer Term	
Topic 1	Introduction to Programming and Algorithms.
Topic 2	Visual Programming building an App.

Year 8 Computing

Autumn Term	
Topic 1	In this unit, learners will learn about email safety with a focus on preventing and dealing with spam. They will consider the importance of strong passwords and learn how to create them. Learners will build on their knowledge of plagiarism and fair use of people's work by learning how to write citations and references for websites they may use. They will scrutinise photographs that they see online and learn how easy it is to manipulate pictures and present them as reality.
Topic 2	This unit takes learners on a tour through the different layers of computing systems: from programs and the operating system, to the physical components that store and execute these programs, to the fundamental binary building blocks that these components consist of.
Spring Term	
Topic 1	This unit begins by defining a network and addressing the benefits of networking, before covering how data is transmitted across networks using protocols. The types of hardware required are explained, as is wired and wireless data transmission. Learners will develop an understanding of the terms 'internet' and 'World Wide Web', and of the key services and protocols used. Practical exercises are included throughout to help strengthen understanding.
Topic 2	This unit conveys essential knowledge relating to binary representations. The activities gradually introduce learners to binary digits and how they can be used to represent text and numbers.
Summer Term	
Topic 1	This unit is the first programming unit of KS3 The main programming concepts covered in this unit are sequencing, variables, selection, and count-controlled iteration. All of the examples and activities for this unit use Scratch 3.
Topic 2	In a world where there's an app for every possible need, this unit aims to take the learners from designer to project manager to developer in order to create their own mobile app. Using App Lab from code.org, learners will familiarise themselves with the coding environment and have an opportunity to build on the programming concepts they used in previous units before undertaking their project.

Year 9 Computing Topic Overview 2021-22

Autumn Term	
Topic 1	Cyber Security
Topic 2	Data Science
Spring Term	
Topic 1	Text Based Prgramming
Topic 2	Text Based Prgramming
Summer Term	
Topic 1	Developing for the Web
Topic 2	Vector Graphics

Year 9 Computing Topic Overview

Autumn Term	
Topic 1	This unit takes learners on a journey of discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks. The learners will start by considering the value their data holds and what organisations might use it for. They will then learn about social engineering and other common cybercrimes, and finally look at methods to protect against these attacks.
Topic 2	In this unit, learners will be introduced to data science, and by the end of the unit they will be empowered by knowing how to use data to investigate problems and make changes to the world around them
Spring Term	
Topic 1	This unit introduces learners to text-based programming with Python. The lessons form a journey that starts with simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and elucidating the mechanics of program execution.
Topic 2	This unit introduces learners to text-based programming with Python. The lessons form a journey that starts with simple programs involving input and output, and gradually moves on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and elucidating the mechanics of program execution.
Summer Term	
Topic 1	In this unit, learners will explore the technologies that make up the internet and World Wide Web. Starting with an exploration of the building blocks of the World Wide Web, HTML, and CSS, learners will investigate how websites are catalogued and organised for effective retrieval using search engines. By the end of the unit, learners will have a functioning website.
Topic 2	Vector graphics can be used to design anything from logos and icons to posters, board games, and complex illustrations. Through this unit, students will be able to better understand the processes involved in creating such graphics and will be provided with the knowledge and tools to create their own.

Year 7 Computing Topic Overview 2021-22

Autumn Term	
Topic 1	Safety First
Topic 2	Word Processing
Spring Term	
Topic 1	Presentation Software
Topic 2	Spreadsheets
Summer Term	
Topic 1	Graphics
Topic 2	End of Year Project

Year 7 Computing

Autumn Term	
Topic 1	In this unit, learners learn about preventing and dealing with cyberbullying; how to use search engines efficiently; how to avoid plagiarism online; and how to be a good digital citizen.
Topic 2	Word processing—students will learn the basic functions of creating and editing a document in Microsoft Word.
Spring Term	
Topic 1	Presentation Software—Students will learn the multimedia functions of Microsoft PowerPoint including audio and video functions.
Topic 2	Spreadsheets—Learners are given an understanding of spreadsheets and how they can be used. In the first five lessons, a different spreadsheet template is provided in which learners learn skills in formatting and entering specific formulas. Lessons 4 and 5 include investigative skills in using the spreadsheet to solve specific problems. Examples include number calculations, sports league tables, test scores, and budget planning. The final lesson allows an open-ended task for pupils to design their own spreadsheet, with ideas and direction provided for particular purposes.
Summer Term	
Topic 1	Graphics—This unit is aimed at developing learners' graphic and presentation skills by introducing drawing as opposed to painting. It also goes on to further learners' understanding of layouts using a desktop publishing application. Learners will learn to draw, order, group and manipulate objects to make a picture. They will also learn to evaluate and create effective layouts, combining text and images.
Topic 2	End of year project. Students will develop a deeper understanding of information technology and digital literacy by using skills across the unit to create a blog post about a real-world cause that they are passionate about and would like to gain support for.