

Computing KS3

Year 7

Autumn 1	Using computers safely, effectively, and responsibly What is Cyberbullying? What is meant by inappropriate content and how do I report concerns? Do I know what identity theft is and how to react to phishing and spam? How do I keep myself safe online? How do I ensure my internet research is reliable? How do I regulate my own digital footprint?
Autumn 2	Introduction to text-based programming (Python) How to program a sequence in Python including: How to use of input and print functions. Understand the purpose and be able to use comments and use assignments. How to use selection statements if, elif and else in a program
Spring 1	Graphics What is the difference between a Vector and a Bitmap image? Can I create my own Vector and Bitmap image using specialist software? Can I explain tools such as the magic wand, layers, background, and canvas?
Spring 2	Sound manipulation How is sound digitised and stored on computers? What can I learn about basic sound editing techniques? How do I add sound effects and mix a track? Can I complete a creative project for a radio advert? How do I create a script, record speech and source sound effects?
Summer 1	Spreadsheet modelling How can I use a spreadsheet model to make predictions? What are different examples of modelling in the real-world? What is the difference between a formula and a function? How can I create simple formulae to manipulate data for a purpose? How can I output data using graphs and charts?
Summer 2	Creating a video Can I work in a group to create a project brief for a TV advert? Can I create a storyboard and use tools such as cutting, trimming, scrubbing and multiple tracks?

Year 8

Autumn 1	Understanding Computers Can I distinguish between hardware and software? Identify Input, Output and Storage devices? Understand how processor speed affects computation time. Define a Bit, Byte, KB MB TB PB. Will I be able to name three types of optical storage device? Review the history and development of communication. Understand how modern communication and computing devices combine multiple technologies. Can I discuss the different ways and applications in which modern technology is used?
Autumn 2	Intro into Python Am I able to program a sequence in Python including: The use of the interactive mode, The use of script mode, The use of input and print functions? Understand the purpose and be able to use comments? Be able to make use of assignment? Use selection statements if, elif and else in a program Understand one search algorithm. Can I understand what Python is and some applications for it? Understand what a syntax error is and be able to interpret an error message? Identify the different types of programming errors and how to fix them: syntax errors / run-time / errors and logic errors
Spring 1	HTML Website development Understand the meaning of the term the World Wide Web and able to make a simple web page including: Creating HTML in a text editor / Viewing the page in a web browser. Am I able to use the following HTML tags: Headings, paragraphs? Can I identify how CSS is used to change the styles in web pages and websites? Am I able to complete wireframes for a website and gather content? Spreadsheets Do I know how to design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems? Can I reference cells, create simple formulas including * / + -? Be able to automatically create formulae using relative cell referencing. Understand what computer models are used for. Understand that spreadsheets can be used to build financial models. Make use of relative and absolute cell referencing and create a financial model to predict the profit on the sale of merchandise.
Spring 2	Graphics Am I able to explain the difference between a Vector and a Bitmap image? Can I create my own Vector and Bitmap image using specialist software? Can I explain tools such as the magic wand, layers, background, and canvas? Do I understand the characteristics of a vector graphic and how it is stored and am I able to create a vector-based logo that includes: Shapes and Fills? Understand how bitmap graphics are made from individual pixels.
Summer 1	Spreadsheets Am I confident to use spreadsheets to model data? How do I demonstrate a range of advanced functions within spreadsheets? How does the use of validation within spreadsheets minimize errors? How do I develop and use macros to automate aspects of spreadsheets? Am I able to reference cells, create simple formulas including * / +? Am I able to automatically create formulae using relative cell referencing? Understand what computer models are used for. Can I make use of relative and absolute cell referencing?
Summer 2	Creating a video Can I work in a group to create a project brief for a TV advert that includes: A product that you want to advertise? Am I able to create a storyboard for a TV advert that includes Scene Numbers and Shot Numbers? Use and edit the television advert including: Cutting and trimming, using multiple tracks Scrubbing. Do I know the different camera techniques including: Camera angle, Shot type, Camera movement? Use a digital camera or smartphone to record video with the correct settings.

Year 9

Autumn 1	Networks Can I explain the main components of a network and the Internet? How do I explain the purpose of an IP address? What must I know about cloud computing? How do I explain how and why data is split into packets? What must I know about the features of wired and wireless connections?
Autumn 2	Computer crime and Cyber security Understand what is meant by hacking. Do I understand what personal data is and aware of what identity theft is? Am I able to create strong passwords and learn about different types of email scam including: Phishing? Do I understand the Computer Misuse Act and what computer activities are illegal?
Spring 1	Computational thinking Do I understand how abstractions are used in everyday life and am I able to create abstractions for different purposes? Understand how networks are used to make an abstraction of a maze. Do I know the common Boolean operators: AND, OR, NOT? Can I explain different logic gates including: AND gates, OR gates, NOT gates? Am I able to explain what an algorithm is and create a sequence of instructions to achieve a goal? Understand how decomposition can be used to break down problems into more manageable components. Be able to break down a large computing problem into its parts and understand.
Spring 2	Python Next Steps Am I able to Recall different data types, Write an IF-ELSE statement and understand the advantage of using a list over many single variables? Can I recall how to use the int(), float() and str() functions to convert data types? Am I able to distinguish between a procedure and a function? Can I use a while loop to repeat a section of code? Can I apply the same to a for loop?
Summer 1	Making games Do I know how to create a game, create instances of an object and test a game by previewing it? Can I understand the key components of a platform game including: Game objectives / Characters and sprites? Am I able to create a theme and concept art for a platform game and yo design sprites for a platform game? Understand how collision detection works and implement further features of platform. Can I create a scoring system for my game?
Summer 2	AI and Machine learning Do I understand the origin and uses of AI? Am I able to explain what ethics is and consider some simple ethical hypothetical problems? Understand what ethics I and do I understand and discuss ethical issues as they relate to AI. What must I consider when discussing the negative impacts of technological advancements on the environment? How do I explain how algorithms be used to make moral decisions in a real-life situation? Do I understand how rules are used in AI decision making? Can I explain how intelligence can be measured in humans and computers? Do I know what the Turing Test is and how it works and understand the difference between facts and rules?