The Talentum LEARNING TRUST

Learning journey map Computing Studies 2023-24

KS3 Computing Studies

The central intent of the Computing curriculum is for students to develop their computational thinking skills. By the end of Year 8, students should be able to use these skills to solve problems and design programs. In addition, they should be able to understand how computers work, and be aware of ethical issues surrounding computing. By developing these skills, students will be well-prepared to use computers in their future studies and careers.

By the end of Year 8, students would have developed their ability to think computationally. This involves decomposing problems into smaller parts, recognising patterns and generalisations, and using abstraction and modularisation to manage complexity. By the end of Year 8, students should be able to apply these concepts to design solutions to problems. They should also be able to evaluate existing digital solutions, and consider the ethical implications of computing. In addition, they should be familiar with a range of software tools and programming languages, and be able to use them to create working programs. Ultimately, the goal is for students to develop an understanding of how computing can be used to solve problems and add value in the real world.

Year 9

E-safety: Think You Know
Learners will learn about how to identify risky behaviour online, how to deal with uncomfortable situations, and how to report inappropriate contact and content.

Computing systems
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.

Media – vector graphics
This unit offers students the opportunity to design graphics using vector graphic editing software

Mobile App development
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.

Representations – from clay to silicon
This unit conveys essential knowledge relating to binary representations.

Developing for the web
In this unit, learners will explore the technologies that make up the internet and World Wide Web.

Year 8

Impact of technology – collaborating online
This unit has been designed to ensure that learners are given sufficient time to familiarise themselves with the school network.

Networks from Semaphores + the Internet
This unit begins by defining a network and addressing the benefits of networking, before covering how data is transmitted across networks using protocols.

Using media – gaining support for a cause
During this unit, learners develop their understanding of information technology and digital literacy skills.

Programming in Scratch P1
This unit is the first programming unit of KS3. The aim of this unit and the following unit ('programming 2') is to build learners' confidence and knowledge of the key programming constructs.

Programming in Scratch P2
Programming II follows on from the foundations built in 'Programming I'. It is vital that learners complete 'Programming I' before beginning this unit. This unit begins right where 'Programming I' left off.

Modelling Data – Spreadsheets
The spreadsheet unit for Year 7 takes learners from having very little knowledge of spreadsheets to being able to confidently model data with a spreadsheet.

Year 7

Programming – Sensing
The unit begins with a simple program for learners to build in and test in the programming environment, before transferring it to their micro:bit.

Creating Media – 3D Modelling
During this unit, learners will develop their knowledge and understanding of using a computer to produce 3D models.

Data and information – Spreadsheets
This unit introduces the learners to spreadsheets.

Programming – Variable in games
This unit explores the concept of variables in programming through games in Scratch.

Creating Media – Web page creation
This unit introduces learners to the creation of websites for a chosen purpose

Computing systems and networks – Communication
In this unit, the class will learn about the World Wide Web as a communication tool.

Year 6

Welcome to the Computing Lab
In this unit, learners will develop their understanding of computer lab, Computational Thinking, and our school policies surrounding IT usage.

E-safety: Play, Like, Share
Learners will learn about how to identify risky behaviour online, how to deal with uncomfortable situations, and how to report inappropriate contact and content.

Digital Literacy
This unit gives learners the opportunity to showcase their skills built in previous years, with a focus on Microsoft Office software.

Creating Media – Desktop Publishing
Learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages.

Programming A – Repetition in Shapes
Learners will create programs by planning, modifying, and testing commands to create shapes and patterns.

Programming B - Code.org
In this unit, learners will use block code to explore the concept of selection in programming through the use of the Code.org programming environment.

Year 5

KS2 Computing Studies

The Computing curriculum is built for all children to be computational thinkers. This means they can flexibly apply the powerful ideas of computer science, which underpin all digital technologies, to solve complex problems. They can dissect problems into their component parts, identify patterns and relationships, generalise from what they already know to make deductions and develop innovative solutions. As children progress through KS2, they will deepen their understanding of these ideas and how to use them in increasingly sophisticated ways. By the end of Year 6, children will be confident in applying them across a range of other curricular areas to solve problems they encounter in their everyday lives.

The Computing curriculum Intent is that, by the end of year 6, pupils will be able to: Design and write programs that carry out specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts; use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs; understand computer networks including the internet, how they can supply multiple services such as email and the world wide web and the opportunities they offer for communication and collaboration; understand how instructions are stored and executed within a computer system; understand how data is represented and processed inside a computer; evaluate information systems, including whether they are fit for purpose, usable, reliable and secure; be responsible, competent, confident and creative users of information and communication technology.