

Y7 ROADMAP – COMPUTER SCIENCE

Subject Aim: You will use a range of different types of software to help to build on your current knowledge of applications and gain further understanding of safety, networking and programming concepts : 1) **How does data travel from one continent to another?** 2) **How far can a vector graphic stretch ?**

TERM 1

E-safety - Unit 1:

You will begin by starting your computer science journey looking at passwords, what makes a strong password and why should your password be kept secure we will look at the Internet and how to keep safe online. You will consider the consequences of some of the main issues associated with e-safety.

TERM 2

Networking - Unit 2 : From Networks to Semaphores

These lessons will get the learners thinking about the history of different communication methods. Learners will learn what a computer network is, along with the meaning of the word 'protocol'. Learners will gain an appreciation of the growth of networked devices

TERM 3

Programming - Unit 3 : Programming essentials in scratch

The aim of this unit is to build learners' confidence and knowledge of the key programming constructs. No previous programming experience is required, but it does offer learners the opportunity to expand on their knowledge. The main programming concepts covered in this unit are sequencing, variables, selection, and count-controlled iteration.

TERM 4

Spreadsheets - Unit 4 : Formula, Function, Purpose

We will be looking at the purposes and uses of spreadsheets and how they are used vastly in businesses and companies. We will be exploring and creating spreadsheets using formulas and functions students will use a model to check and change data.

TERM 5

Programming - Unit 5: Scratch concepts and subroutines

Learners will build on their understanding of the control structures' sequence, selection, and iteration, and develop their problem-solving skills. Learners will learn how to create their own subroutines, develop their understanding of decomposition, learn how to create and use lists, using problem-solving skills by working through a larger project.

TERM 6

Digital Literacy - Unit 6: Cause for Support

Do you want to change the world? Here's a good place to start. They will develop a deeper understanding of information technology and digital literacy by using your 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.

ASSESSMENT

- Most lessons will test your knowledge using a variety of activities including Knowledge Tests, the big picture and exit tickets.
- For each unit, work will be assessed through written Test that will assess your understanding of the key vocabulary, knowledge and concepts that have been studied.
- The study of each unit will have practical elements which may be attempting tasks to strengthen your knowledge of tools
- Assessments and tasks will link into the wider aspects of computer science and equip students for GCSE.

INDEPENDENT LEARNING

- Knowledge Organisers are expected to be used weekly to support the learning and recap of key vocabulary as the course progresses.
- Students will have set extension tasks that extend on existing knowledge and link to wider aspects in the community.
- The following websites can help students build on their knowledge.
- <https://codepen.io/your-work>
- <https://scratch.mit.edu/projects/edtor/>



ENRICHMENT

Students can participate in a STEM challenge: Young Coder's competition, that takes place once a year.
<https://codingcompetition.org/>

What Next?

Once completed, you will then progress onto Y8 where you will begin studying command line programming. Vector Graphics and web/App development.