

COMPUTER SCIENCE

Learning Journey

Year 10

1

Half Term

PROGRAMMING 1

We're learning the basics of programming. We'll learn to program in Python by building on the work you did in years 8 and 9. We'll cover variables, datatypes, loops, if statements and subroutines. You'll be able to write simple programs after this.

2

Half Term

PROGRAMMING 2

We're learning more advanced programming techniques. We'll learn to save to files and load data from files, error handling so users can't crash our programs and arrays to store sets of data.

3

Half Term

DATA REPRESENTATION

We're learning how data is stored on a computer. We'll learn the units of storage like megabyte and gigabyte, how data can be represented as binary, denary and hexadecimal, how images and sounds are represented and how compression works.

4

Half Term

ALGORITHMS & PSEUDOCODE

We're learning different algorithms for searching and sorting data and how to write algorithms. We'll learn to write algorithms as flow charts and as pseudocode and we'll learn to use trace tables to see what an algorithm is doing.

5

Half Term

BOOLEAN LOGIC & DATABASES

We're learning how logic gates work in a CPU and how databases store data. We'll learn about how logic gates and logic circuits make every algorithm and bit of code work. We'll learn how databases work and make some simple databases.

6

Half Term

RELATIONAL DATABASES & SQL

We're learning how SQL is used to get data from databases. We'll learn more about how relational databases work and make our own. We'll learn about SQL (a type of code for dealing with databases) and we'll use it to edit and get data from databases.

Year 11

1

Half Term

COMPUTER SYSTEMS

We're learning about computer hardware and how the CPU and RAM work together. We'll learn how a CPU works in detail and how a computer processes instructions at a low level. We'll learn about the different types of storage and how they work.

2

Half Term

CYBER SECURITY & THE CLOUD

We're learning about cyber security threats and how to prevent them. We'll learn about the different threats and how they work. We'll look at the job of a penetration tester and we'll look at the advantages and disadvantages of storing data in the cloud.

3

Half Term

NETWORKING

We're learning about networking, how computers communicate. We'll learn about the types of network, wired and wireless networks, ways of connecting computers and ways of keeping a network secure from hackers and viruses.

4

Half Term

IMPACTS OF TECHNOLOGY

We're learning about the impacts technology has on the world and some smaller topics. We'll learn about the difference between low level and high level programming languages, how operating systems work and the impact of technology on issues such as privacy.

5

Half Term

REVISION

We're revising and you're sitting your exams!

