CIRENCESTER
DEER PARK

GCSE Computer Science

2.5 Translators and IDEs
What is the purpose of a translator? What are the characteristics of compilers, interpreters and assemblers? Tools in an IDE.

Testing

Mock exams

Revision

Programming Challenge

2.3 Producing Robust Programs
Understanding why defensive programming is necessary. Creating code which is easy to maintain. The purpose of testing

Python programming

Exam Paper 2

Exam Paper 1

Mock exams

2.6 Data Representation
How do computers represent data? Convert between denary, binary & hex. Add binary numbers. Character sets and why they are used. What are bitmaps, image resolution, colour depth and metadata? How can sound be sampled and stored? How does sampling rates, duration and bit depth affect the size of sound files and quality of its playback? What is compression? What is the difference between lossy and lossless compression?

2.2 Programming Techniques
Storing data using appropriate data types. Using sequence, selection and iteration. Using SQL to search for data. Using arrays to store data.

Programming Challenge

Python programming

2.4 Computational Logic
Creating simple logic diagram. Creating truth tables. Combine Boolean and logical operators to solve problems

2.1 Algorithms
Using abstraction, decomposition and algorithmic thinking to define a problem. Create structure diagrams & flowcharts. How to efficiently search and sort data. Writing algorithms using Python. What are binary, bubble, merge, insertion sorts? How do I identify bugs and fixes? What are trace tables?

Mock exams

Mock Revision

Python programming

1.5 System Software
What are operating systems? What is utility software?

Programming Challenge

1.5 &1.6 End of Unit Test

Learn to Code in Python
Input/Output, If statements, Loops, Text & Numbers, Random Values, Python Turtle, Creating robust programs, Lists, 2D Lists, Sub Programs. Python Challenges & practice.

Mock Revision

11

Python programming

1.6 Ethical, Legal and Cultural Concerns
What are the issues created and addressed by technology? How does technology impact on key stakeholders?

Programming Challenge

1.4 System Security
What forms of attack happen to computers and networks. How to prevent attacks.

1.3 Network Topology, Protocol and Layers
What are the properties of star and mesh topologies. Why and for what purposes are protocols used?

1.2 End of Unit Test

1.2 Storage
Why do we need secondary storage? What are optical, magnetic and solid state storage? How is each suitable for different purposes?

Python programming

1.3 & 1.4 End of Unit Test

1.3 Wired & Wireless Networks
What are LANS & WANs? What factors affect the performance of networks?

1.1 The von Neumann Architecture
What are the four parts: Memory, Control unit, Arithmetic Logic Unit, Input / Output interface.

1.2 Memory
What is the purpose of RAM and ROM? What are the differences between RAM and ROM and their advantages / disadvantages? Why do we need virtual memory? What is flash memory?

10

Python programming

START OF GCSE

Introduction
Specification requirements. Mark Scheme. Course calendar. Where to find resources. Folder Setup. Workbooks. Homework calendar. Student/Teacher expectations.

CPU

1.1 Systems Architecture
What is the CPU? How does it function? What are the components it is made of? What are the common characteristics which affect performance? What are embedded systems?

1.1 End of Unit Test