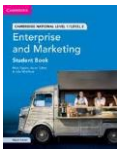
KS3 Computer Science Learning Journey



GCSE Business

Cambridge Nationals iMedia

Cambridge Nationals Enterprise and Marketing

Summer Transition to OCR GCSE Computer Science

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Advanced Computer Networks
Performance, security, topologies.
What is the internet and how does it work?
What are packets, protocols and layers

Python IDE
Text based programming to develop more advanced sequence selection and iteration. Pupils to use computational thinking to solve problems

Algorithms
What are algorithms? Solve problems using algorithmic thinking. What are searching algorithms.

Bebras challenge
National Computational Thinking Challenge

End of Year Assessment

Computational Thinking
What is computational thinking and how to solve problems

Data Representation: Bitmaps + Sound
How do computer represent and store text, images and sound? How can you calculate colour depth and file sizes. What data is stored in images and sound?

Year 9 Options

Computer Basics including IDEA Award
Creating complex passwords & How to stay safe online

Data Representation
How are numbers represented in a computer? This includes binary and Hexadecimal calculations.

Logic Gates
What are logic gates, why and how do circuits use them?

End of Year Assessment

Cryptography: Alan Turing Week (Pride)
Who is Alan Turing and what did he do? What is Cryptography and how to decipher encoded messages

Computer Networks Essentials
What is a computer network? Advantages and disadvantages. Types of networks, network devices.

HTML
Developing a website using HTML and CSS

Cybersecurity. Internet Safety week
What are laws around computer use. How to protect your online identity. H&S and environmental issues are discussed

Operating Systems
What is the operating system, its structure and functions?

Inside a CPU
What is the CPU, its structure and functions?

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Data Representation
How do computer represent text, images and sound

Python Turtle IDE
Text/ visual based programming to develop sequence selection and iteration using Physical Computing hardware

Bebras challenge
National Computational Thinking Challenge

Computational Thinking
What is computational thinking and how to solve problems

Computer Basics including IDEA Award
Creating complex passwords & How to stay safe online

End of Year Assessment

Python Turtle
Text based programming to develop sequence selection and iteration

Microbit
Text/ Block based programming to develop sequence selection and iteration using Physical Computing hardware

Scratch
Block based programming to develop sequence selection and iteration

E-Safety. Safer internet week
What is the Internet. How to stay safe online

Algorithms with Flowol
Developing and simulating algorithms in Flowol using real life scenarios

Bebras challenge
National Computational Thinking Challenge

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KS2 Computer Science

Baseline Test

Computer Basics including IDEA Award
Creating complex passwords & How to stay safe online

Computer Systems
What is a Computer? Internal parts of a Computer

Data Representation: Binary
What is binary and how do computers use it?

Computational Thinking
What is computational thinking and how to solve problems

Each topic has an end of unit test that covers the content covered and previous topics.

Each topic has a knowledge organiser which covers basic and more detailed content. These are used for revision.

Each topic has retrieval practice on previous content including past topics.

Each topic has keywords and definitions that need to be learnt and understood.

Each year group will be entered into a national computational thinking challenge.