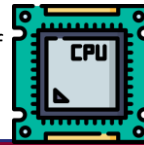


welcome

What is the CPU? Function of the CPU.
CPU Components



FDE Cycle – what is the purpose of the FDE cycle? How are instructions executed inside CPU?

What is an embedded system? List examples

YEAR
10

WHERE HAVE YOU BEEN?

Intro to Comp Sci

Specification requirements.
Overview of course expectations.

1.1 System Architecture

Registers – What is MAR/MDR/PC/ACC?
What's the role of registers?

Performance – What factors affect CPU performance? What are cores, cache, clock speed?

Additional Binary – identify binary addition rules. Add binary values together

Calculate various capacity storage space between devices.

RAM/ROM/VM What is the difference and purpose of RAM, ROM and VM?

SKILLS TAUGHT:

- Computer Hardware
- Function of CPU
- Registers
- FDE Cycle
- CPU Performance
- Memory
- Storage
- Data conversions



1.2 Memory and Storage

Binary – what are binary units? How to convert between binary – denary..

Storage devices – List secondary storage types and devices. Identify when they would be used.



Assessment preparation – exam retrieval practice

Assessment



NEXT
Y10

HALF TERM 2

Component One Assessment
1.1 // 1.2

Why are we learning this? To be able to understand the components that make up the digital systems, and how they communicate with one another and with other systems.

welcome

Hexadecimal – how can you convert between hex, binary and denary?

101100
010110
100101

Image representation in binary including metadata

What is compression? What's the difference and uses of lossy and lossless compression?

YEAR
10

Assessment Recap

1.2 Memory and Storage

Assessment feedback.
Responding to assessment

Representing characters –
What is the difference
between ASCII and Unicode?

Representing sound – How
is sound stored? Sample
size, bit rate etc.



WHERE HAVE
YOU BEEN?



Star and mesh networks.
Characteristics about each
adv and disadv.

Wireless technology – What
factors affect the performance of
a network including bandwidth.

Networks Hardware –
What hardware makes up
the network?



SKILLS TAUGHT:

- Data representation – characters, images and sound.
- Computing Networks
- Types of networks
- Wireless Technology
- Network Topologies
- Client and peer networks

1.3 Networks

P2P/Client server – What are
the characteristics? What are
the advantages/disadvantages?

LAN/WAN – What is a
LAN/WAN? What are the
characteristics of both?.

Assessment preparation –
exam retrieval practice

Assessment



NEXT
Y10

HALF TERM 3



Component One Assessment
1.1 // 1.2 // 1.3

Why are we learning this? To be able to understand the components that make up the digital systems, and how they communicate with one another and with other systems.

Computer Science Year 10 Half Term 3

Computing Strands:
Computer Science

Internet – What's the role of the internet? What is the difference between WWW and the Internet?



The role of and purpose of DNS

State and explain the purpose of layers including linking protocols.

YEAR
10

Assessment Recap

WHERE HAVE
YOU BEEN?

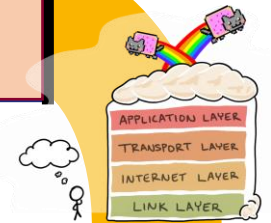
Assessment feedback.
Responding to assessment

1.3 Networks

IP and MAC address – What is the purpose? What is the difference?



State and explain the purpose of protocols on a network.



Explain methods to keep computer system secure from malwares/attacks

Malware – What are the different forms of malware? What is the role of malware?



SKILLS TAUGHT:

- Role of the Internet
- IP addresses
- MAC addresses
- Domain Name System
- Layers/Protocols
- Malwares
- Network Security
- Purpose of Operating Systems

1.4 Network Security

Explain what makes a good network policy.

Explain the purpose of network attacks including brute force, SQL injection and DDOS.

What is the purpose of operating systems?
What are the different types of operating systems that may be used on digital devices?



1.5 System Software

Explain the role and purpose of software managers.
What is memory, peripheral, user and file management?

NEXT
Y10

HALF TERM 3

Why are we learning this? To be able to understand how to keep networks safe and protected. To be able to explain how data can be sent on a network.

welcome

YEAR
10

WHERE HAVE
YOU BEEN?

1.5 Cont

Software utilities – What is utility software? Why is encryption/ defragmentation/ data compression needed?

Assessment preparation –
exam retrieval practice



Assessment

Component One Assessment
1.1 // 1.2 // 1.3 // 1.4 // 1.5



Assessment feedback.
Responding to assessment

What are the issues created and addressed by technology and the impact on society including ethical, legal, cultural, environmental and privacy.



Legislation – Data protection act, computer misuse, copyright and licenses



SKILLS TAUGHT:

- Digital technology
- Social and cultural impacts of using technology
- Computing legislation
- Electronic Waste
- Privacy issues with using technology

1.6 Ethical, Legal & Cultural Concerns

What are the issues created and addressed by technology and the impact on society including ethical, legal, cultural, environmental and privacy.



2.2 Programming

Programming Fundamentals –Using variables, constants, operators, inputs/outputs. Sequences, selection & iteration. Arithmetic, integers, Boolean. Characters & string manipulation, data types and casting. String manipulation & file handling, open, read, write, close. Storing data in records. Using SQL to search for data. Using arrays, sub programs.



NEXT
Y10

HALF TERM 4

Why are we learning this? To be able to understand the impacts of digital technology to the individual and to wider society.

Computer Science Year 10 Half Term 5

Computing Strands:
Computer Science

welcome

Assessment
practice – walking
talking exam
questions



Assessment
practice – walking
talking exam
questions

Assessment
practice – walking
talking exam
questions



Exam Retrieval

2.2 Programming

Exam Retrieval

Assessment
practice – walking
talking exam
questions

Programming Fundamentals –Using variables, constants, operators, inputs/outputs. Sequences, selection & iteration. Arithmetic, integers, Boolean. Characters & string manipulation, data types and casting. String manipulation & file handling, open, read, write, close. Storing data in records. Using SQL to search for data. Using arrays, sub programs.

Assessment feedback.
Responding to assessment



Assessment preparation –
exam retrieval practice



SKILLS TAUGHT:

- Computational thinking
- Thinking abstractly
- Concepts of decomposition
- Sequence / Selection and Iteration in programming
- Debugging programs
- Designing programs
- Writing programs

Assessment

Assessment practice – walking
talking exam questions (4)

Component One Assessment
1.1 // 1.2 // 1.3 // 1.4 // 1.5 // 1.6

Exam Retrieval

2.2
Programming

NEXT
Y10

HALF TERM 6



Programming Fundamentals –Using variables, constants, operators, inputs/outputs. Sequences, selection & iteration. Arithmetic, integers, Boolean. Characters & string manipulation, data types and casting. String manipulation & file handling, open, read, write, close. Storing data in records. Using SQL to search for data. Using arrays, sub programs.

Why are we learning this? To be able to analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs.

welcome



Assessment
practice – walking
talking exam
questions

Assessment
practice – walking
talking exam
questions

Assessment
practice – walking
talking exam
questions



Exam Retrieval

Assessment
practice – walking
talking exam
questions

Assessment
practice – walking
talking exam
questions

Assessment
practice – walking
talking exam
questions

Assessment preparation –
exam retrieval practice



SKILLS TAUGHT:

- Computational thinking
- Thinking abstractly
- Concepts of decomposition
- Sequence / Selection and Iteration in programming
- Debugging programs
- Designing programs
- Writing programs

Assessment

Component One Assessment
(Mock Exam)

1.1 // 1.2 // 1.3 // 1.4 // 1.5 // 1.6

2.2 Programming

Programming Fundamentals –Using variables, constants, operators, inputs/outputs. Sequences, selection & iteration. Arithmetic, integers, Boolean. Characters & string manipulation, data types and casting. String manipulation & file handling, open, read, write, close. Storing data in records. Using SQL to search for data. Using arrays, sub programs.



Why are we learning this? To be able to analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs.