What is inside the box

By the end of this unit students should:

- understand the hardware and software components that make up computer systems
- understand how data of various types can be represented and manipulated digitally, in the form of binary digits

Lesson	Learning Objective	Success Criteria	Resources
1	Why does 1 + 1 = 10?	• Expected You will be able to convert binary numbers into denary and and denary numbers into binary • Above You can describe why a computer system uses binary to represent data • Above Above You can write an algorithm to easily convert denary numbers into binary	Lesson1.ppt Binary number cards
2	If 1 + 1 = 10, what is 'a'?	• Expected You will be able to decode a message written in binary • Above You will be able to describe how ASCII is used to represent characters • Above Above You can explain how many characters can be represented using bits	Lesson2.ppt ASCII table Secret Message
3	What is inside the box?	• Expected	Lesson3.ppt 'What is inside the box' worksheet

		You can identify the major components of a computer system • Above You can describe the role the components play in the computer system • Above Above You can explain why a computer system has two different types of memory	Old machines Device camera
4	Which would you buy?	• Expected You can identify a suitable computer system for a client based on a set of criteria • Above You can explain your reasons for selecting a particular computer system • Above Above You can evaluate two computer systems and pick the most suitable for a client	Lesson4.ppt 'Which would you buy' task video camera

5	If hardware is the stuff I can see and touch, what is software?	• Expected You can explain the difference between software and hardware and identify some applications are there purpose • Above You can identify the different types of software (system, application) and give examples of each • Above Above You can describe the role of the operating system	Lesson5.ppt 'Different types of SW' sheet
6	mp3s, wavs, bmps and jpgs – what is it all about?	• Expected You can describe how images and sounds are stored digitally • Above You can describe the difference between wavs and bmps and jpgs and mp3s • Above Above You can describe the difference between lossy and lossless compression	Lesson6.ppt 'What is it?' sheet

Marking Rubric

Grade	Hardware and Processing	Data and Data Representation
Below Expected	You have not met all of the expected criteria	
Expected	• You can identify the major components of a computer system • You can identify a suitable computer system for a client based on a set of criteria • You can explain the difference between software and hardware and identify some applications are there purpose	• You will be able to convert binary numbers into denary and and denary numbers into binary • You will be able to decode a message written in binary • You can describe how images and sounds are stored digitally
Above	• You can describe the role the components play in the computer system • You can explain your reasons for selecting a particular computer system • You can identify the different types of software (system, application) and give examples of each	• You can describe why a computer system uses binary to represent data • You will be able to describe how ASCII is used to represent characters • You can describe the difference between wavs and bmps and jpgs and mp3s
Above Above	• You can explain why a computer system has two different types of memory • You can evaluate two computer systems and pick the most suitable for a client • You can describe the role of the operating system	• You can write an algorithm to easily convert denary numbers into binary • You can explain how many characters can be represented using bits • You can describe the difference between lossy and lossless compression