

BTEC in a Box

BTEC First

ICT Practitioners

Sample pages

This file includes selected sample pages from BTEC in a Box Unit 2 - Introduction to Computer Systems. They are for viewing purposes only and cannot be printed or copied.

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You'll find all the resources you need to start teaching your BTEC First in ICT for Practitioners. The box contains complete support for Unit 2 - Introduction to Computer Systems, consisting of:

Delivery plan: a comprehensive medium-term plan for delivering the Unit.

Case study activities: vocationally relevant case studies, with suggested activities and discussion points that introduce or build on concepts within the unit. The delivery plan will link these into the unit.

2 full assessment packages: these will be full assessment plans for the Unit including material for both student and teacher.

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- Unit 1 - Using ICT to Present Information
- Unit 2 - Introduction to Computer Systems
- Unit 4 - Website development
- Unit 9 - Database Software
- Unit 10 - Spreadsheet Software
- Unit 16 - Mobile Communications Technology
- Unit 18 - ICT Graphics

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TOPIC **Range of Computers Available**

LEARNING OBJECTIVE **Types of Computers and their Users**

Topic information	Delivery methods	Guidance	Box content
<p>Learners are to identify a range of computers available.</p> <p>A wide range of different computers exists: for example, PCs, servers, PDAs and Apple Macs.</p> <p>They are to describe and compare what different computers are for and the uses to which they are best suited.</p> <p>As the topic develops learners should gain an understanding that computers come in a wide range of specifications for an even wider range of uses.</p> <p>(P1)</p> <p>(8 hours)</p>	<p>The learners should be aware that other computers are available, not just PCs.</p> <p>Initially group discussions on how many different types of computers exist and their purpose would be a good starting point to this unit.</p> <p>Learners may have experience of using other computers and this could be a good starting point to expand the session.</p> <p>A wide range of answers can be expected from the learners covering the range provided here.</p> <p>Specialised graphics and animation computers, such as those used in the film and game industries, could also be discussed.</p> <p>The case studies allow for group discussions to take place to expand understanding of the wide range of uses.</p> <p>The internet is a vital resource for this topic and learners could be directed to specific websites provided to allow independent research.</p> <p>Pages may be printed for non-IT classroom use, but learners would benefit from accessing sites to understand they should also disregard non-</p>	<p>Apple Macs</p> <p>Discussions should allow the introduction of Apple Macs. Many learners will be unaware of Apple computers, but most will be aware of at least one Apple product - the i-Pod, of course.</p> <p>An interesting article on Macs vs PCs can be found here: http://www.macworld.com/2006/08/opinion/dellmacprofollowup/index.php</p> <p>(article on Mac vs PC)</p> <p>More detailed information about the specifics of Apple Macs can be found on their website. This would be a good time to introduce the operating system of the Mac and how it is different from the more familiar Windows. http://www.apple.com/</p> <p>Standalone PCs</p> <p>What is a standalone PC? Generally a PC that is independent from a network and contains its own software and OS.</p> <p>Servers</p> <p>These come in a wide range of configurations from small standing servers to room-sized servers owned by universities and governments. Generally, they store files and application software for multi-user use. They are connected over a</p>	<p>Case Study 1</p> <p>Case Study 4</p> <p>Case Study 5</p> <p>Case Study 11</p>



essential information.

network.

http://www1.euro.dell.com/content/products/productdetails.aspx/dimen_3100?c=uk&cs=ukbsdt1&l=en&s=bsd

http://www1.euro.dell.com/content/products/features.aspx/pedge_SC430_1_SC06430r?c=uk&cs=ukbsdt1&l=en&s=bsd

PDA's

Small portable computers generally used in conjunction with a PC to synchronise and organise data. Later models allow internet and email.

<http://www.pdamd.com/vertical/tutorials/whatispda.xml>

delivery plan

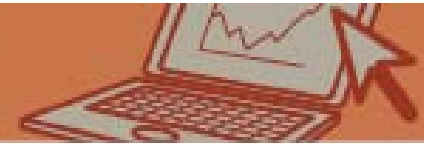


TOPIC **Hardware and Peripherals**

LEARNING OBJECTIVE **Basic Components of a Standalone Computer System**

<i>Topic information</i>	<i>Delivery methods</i>	<i>Guidance</i>	<i>Box content</i>
Describe the basic components of a standalone PC.	The basic PC is made up from many different components and this would be an ideal opportunity to introduce them to the 'inside' as well as the 'outside'.	<p>Use of the internet to research different systems would be an ideal session for learners. System configurations are available from commercial websites.</p> <p>Here is one from SCAN international as used in Unit 1 case study.</p> <p>The PC World link provides details of the insides of the PC and could be used for more able learners.</p> <p>The build a computer site is an excellent resource for learners to understand how it all fits together. This would also be useful later in the unit. Graphics from here would help to complete the learner guide. However, research on other sites should be encouraged.</p> <p>Learners could be engaged by creating a 'dream machine' with no cost restrictions, then researching the specification given cost limits.</p> <p>http://3xs.scan.co.uk/ConfigureSystem.asp?SystemID=199</p> <p>http://www.pcmec.com/byopc/step/1/</p> <p>http://en.wikibooks.org/wiki/How_To_Assemble_A_Desktop_PC</p> <p>http://www.pcworld.com/article/id,110665-page,2-c_installation/article.html#</p>	Case Study 3 AE (1)

delivery plan



Identify the required peripherals.

Learners should identify the peripherals required by one user and find cheaper alternatives.

<http://www.build-a-computer-guide.com/>

<http://www.buildyourown.org.uk/pc-information/what-is-a-pc/>

Peripherals such as printers and scanners should be introduced during this section; however, for the cost-saving user an MFD (multi-functional device) would be a better cost-saving option.

http://tomshardware.co.uk/2002/09/04/building_your_own_pc/page2.html

<http://www.buideasypc.com/hw/howto/assemblepc.htm>

Data flow diagram.

Here the learners should be introduced to how data moves around the system.

It would be a natural extension to the learners identifying input-process-output devices of the system identified earlier.

Diagrams (advanced and simple) can be found in the exemplar.

(P3)

(10 Hours)

assessment activity front sheet



ASSIGNMENT TITLE **Introduction to computer systems**
Back to basics

Learner's name		Assessor's name	
Date issued	Completion date		Submitted on

<i>Reference (ref number for spec criteria i.e. P1, M2 etc.)</i>	<i>Grading criteria</i>	<i>Date achieved</i>	<i>Evidence</i>	<i>Comments/feedback from assessor</i>
P1	Describe the purpose of different types of computer.			
P3	Describe a standalone personal computer (PC) and show how data flows around the system.			
P4	Specify suitable hardware and application software to meet a given user need.			
P6	Configure defined software for a given user need.			

assessment activity front sheet



P7	List the possible data security and legal issues when using a computer in a given situation.
M2	Justify your choice of hardware and software to meet a given user need.
M3	Explain how the configuration of software will help a given user perform their tasks.
D1	Evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.

Learner declaration

I declare that all the work submitted for this assignment is my own work or, in the case of group work, the work of myself and the other members of the group in which I worked, and that no part of it has been copied from any source.

I understand that if any part of the work submitted for this assignment is found to be plagiarised, none of the work submitted will be allowed to count towards the assessment of the assignment.

Signed:

Date:



ASSIGNMENT TITLE **Introduction to computer systems**

Back to basics

ASSIGNMENT OBJECTIVES

- In this assignment you are to provide evidence that you can:
- Show that you **understand the different types** of computers used in homes and businesses and be able to describe the purpose of these in the working situations. (P1)
 - Describe the hardware used in a standalone personal computer system (PC), you will also need to show how **data flows around the system**. (P3)
 - Show that you know how to **select suitable hardware and application software for a specified user and configure the software** for that specified user. (M2), (M3)
 - List the possible **data security and legal issues** when using a computer. (P7)
 - Show that you can **select software** for a specified user and will be able to **configure the software** for a specified user and explain. (P4)
 - You will also need to **evaluate two possible computer systems** (hardware and software) that meet the user needs in terms of both **performance and value for money**. (D1)

TASK INTRODUCTION

You work as a trainee IT engineer and in recent months you have completed many tasks: some have been really easy, others have been more difficult and you have had to ask for help from your line manager. One part of your role has been to record all your completed jobs onto a database.

It is now time for your annual review with your line manager. You have to prepare a report on some of the tasks you have completed. As part of this report your manager needs to know that you have understood what you have completed and just as importantly why.

TASK 1

You have worked on different computers in recent months; some of these have been standalone PCs whilst others have been networked. Some have been brought in by staff to solve problems.

Create a **SIMPLE** guide that describes and compares differences between:

- Standalone PC
- Apple Mac
- Server
- PDA

Use pictures to help you explain the differences.

Explain the purpose of each of the above, by purpose you need to explain what it does and why it is used. (P1)

TASK 2

Standalone PCs are used mainly in small businesses or in the home.

- Describe the basic components that make up a standalone system (use pictures to help).
- Provide a simple data flow diagram of how data flows around the system.
- Describe how computers store data and information.



- Create a simple table that lists RAM from 1 byte to 1 megabyte.
- Create a simple table that lists hard disk memory from 2 gigabytes to 500 gigabytes.

You **MUST** use the correct memory conventions. (P3)

TASK 3 A member of staff has approached you for advice on purchasing a PC to work from home. You have asked a series of questions and obtained these answers.

A. I create reports, spreadsheets and some graphic work with my digital camera I save using USB and I have a cable for this and a software CD.

A. My children may want to research on the Internet and I will need to access email from home.

A. I transfer some large files, nearly 100Mb.

A. They are usually database files from Microsoft Access.

A. I have lots of pictures and I would like to transfer these to the computer, if possible and I also would like to print my reports which also contain coloured graphs and charts.

A. Cost is not a big problem at this time.

A. Will you also supply all the software?

Given all the information above, you should be able to identify all the hardware and software needed to meet this customer's needs.

Present a specification for the **HARDWARE**, **PERIPHERALS** and **SOFTWARE** including costs that meet **ALL** the needs of the above.

You must **JUSTIFY** your choices on your specification.

State **WHY** your choice meets the needs of the user. (M2), (M3)

TASK 4 In Task 3 you were asked to provide a specification for a standalone PC. However, the member of staff is leaving the company in a few weeks time and has come to you for more help.

'As you know I am leaving next week and have ordered the PC you recommended. However, I am worried that I won't be able to set it up correctly. I don't know what goes where and I know I will do it wrong and maybe break something, can you help?'

Create a simple **installation guide** for the PC and **PERIPHERALS**.

Use pictures to help with this, with callouts and text boxes to explain the process.

It is vital that you remember **health and safety** in this task, including **lifting** and **safe uses of electricity**. It is not expected the ESD will be a problem here, but some mention of this is advised. (P4)

TASK 5 In Task 3 you provided a specification for the end user. It was stated that cost was not an issue at this stage. Since then, another member of staff has contacted you and they have similar uses and requirements. However, this member of staff does have a very limited budget.

- Identify **alternative hardware** to perform the same tasks.
- Identify **alternative software** to perform the same tasks.



- Identify **alternative peripherals**.
- **Justify** your choice for the changes and discuss any problems you may see.
- Discuss the **costs vs performance** factors, and if it is **value for money**. (D1)

TASK 6 The staff stated that they are going to transfer files to and from work, they have also stated that they both need to access the Internet and email.

- List potential issues with security in using the Internet.
- List possible legal issues with staff taking home information from work.
- List possible problems when transferring files from an unprotected PC. (P7)

TASK 7 You receive a phone call from the first staff member asking for your help. She explains that her son is visually impaired and has problems using the software in its default setup.

She explains that his school have **configured his PC** in the following way and asks if you can do the same for her son.

To evidence this **YOU MUST TAKE SCREEN SHOTS SHOWING BEFORE AND AFTER**.

Word

- All tool bars are removed leaving only the drop down menus and the format buttons.
- The format tool bar should be moved to the far right.
- The screen should be displayed as a blue background and white text.
- Word should also provide feedback with sound.
- Word should display **LARGE ICONS**.

Desktop

- Move **ALL ICONS** to the bottom right of the screen.
- Move all folders to the top left of the screen.
- Move the recycle bin to the bottom left of the screen.

Mouse

- Configure the mouse to be **RIGHT HANDED**.

Display

- Change the default font size to a **LARGER SIZE 120 dpi**. (P6)

TASK 8 You must **explain** why the changes you have made to the system, Word and desktop will help the son.

Consider the fact that he is visually impaired and how the changes will **benefit him**. (M3)



ASSIGNMENT TITLE **Introduction to computer systems**

Back to basics

ASSIGNMENT OBJECTIVES

- The learner should know different uses of computers in homes and businesses and be able to explain the use of common types of hardware in a personal computer system (PC) and show how data flows around the system.
- The learner will know how to select suitable hardware and application software for a specified user and configure defined software for a specified user.
- The learner will be able to list the possible data security and legal issues when using a computer.
- The learner will know how to select software for a specified user and will be able to configure software for a specified user.
- The learner will also evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.

WHAT YOUR LEARNERS WILL DO IN THIS ASSIGNMENT

Learners are to describe and compare different computers and their uses. Here learners are expected to be aware that other computers are available, not just PCs.

Learners will be able to describe the main components of a standalone PC.

Learners will show how data flows around the system by providing a data flow diagram.

Learners will describe how RAM and hard drive space is calculated.

Learners will specify a PC system from a given scenario and user requirements.

Learners will be able to describe how both systems are value for money and how performance loss can be minimised. Cost vs performance.

Learners will be able to configure the system as described to them.

Learners will explain WHY and HOW the changes will benefit the given user.

Learners will be able to LIST security issues and legal issues from the given scenario.

Learners will be able to JUSTIFY why they have chosen a system to meet the needs of the user.

WHAT THEY WILL LEARN IN THIS ASSIGNMENT

That all computers are not the same and that different types of computers are used to perform different tasks.

Learners will describe the basic components of a PC, using graphics and text boxes to help explanation.

Learners will describe how data flows around the system using input-process-output diagrams.

Learners will understand that systems can be designed for different users and that costs are a factor. They will also find alternative software to MS Office, for example Open Office and operating systems such as Linux.



Learners should identify the virus threats and legal issues in transporting files from work to home and vice versa.

Learners will be able to select systems that meet a given scenario.

They will also be able to configure the system as required by an end user.

They should be able to identify how cost versus performance is also a part of the selection process.

GRADING SCHEME
(what is required for each grading level)

P1 Describe the purpose of different types of computer.

P3 Describe a standalone personal computer (PC) and show how data flows around the system.

P4 Specify suitable hardware and application software to meet a given user need.

P6 Configure defined software for a given user need.

P7 List the possible data security and legal issues when using a computer in a given situation.

D1 Evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.

M2 Justify your choice of hardware and software to meet a given user need.

M3 Explain how the configuration of software will help a given user perform their tasks.

GUIDANCE NOTES

Learners are to develop an understanding of different types of computer hardware and the different uses and users. Learners must also be aware of the range software available including alternatives.

The tasks although separated into pass, merit and distinction grades, do flow naturally and learners should be encouraged to develop understanding by attempting the merit and distinction criteria.

Threats to the system should be analysed in a systematic way and lists produced. These lists will be vital later as a prompt for greater explanations.

Group work and task introductions will aid understanding.



ASSIGNMENT TITLE **Introduction to computer systems**

Back to basics

ASSIGNMENT OBJECTIVES

- In this assignment you are to provide evidence that you can:
- Show that you **understand the different types** of computers used in homes and businesses and be able to describe the purpose of these in the working situations. (P1)
 - Describe the hardware used in a standalone personal computer system (PC), you will also need to show how **data flows around the system**. (P3)
 - Show that you know how to **select suitable hardware and application software for a specified user and configure the software** for a specified user. (M2), (M3)
 - List the possible **data security and legal issues** when using a computer. (P7)
 - Show that you can **select software** for a specified user and will be able to **configure the software** for a specified user and explain. (P4)
 - You will also **evaluate two possible computer systems** (hardware and software) that meet a given user need in terms of both **performance and value for money**. (D1)

WHAT YOU WILL DO IN THIS ASSIGNMENT

Identify the differences between the provided computers. We are not expecting you to say this one is big and this one is small, for example:

- Differences should be in terms of CPUs, Operating Systems and main uses and users.
- Use pictures to help you explain. For example, a PC and an Apple computer are both computers but they are also different, but in what way? What can they do differently? Who uses them?

This is not as difficult as you may think if you use the PC as your main system and compare all others to this.

- You are to present a simple guide to a modern PC. Include all the main parts and use pictures to help you. You must also identify these parts.
- Create a simple data flow diagram showing how data is moved around the PC. This is a widely available diagram that never changes.
- Describe how computers store data requires you to understand binary storage.
- You will not perform any calculations, but must show you understand that computers do NOT store letters and numbers as we know them.

This information is also widely available using the Internet and books.

- Produce a simple table showing the range of RAM from 1Kb to 1Mb of RAM. Use the RAM calculations of 1,2,4,8, etc. Not 1,2,3,4,5,6 as this is NOT how RAM is calculated.
- This is similar to the table above, but this time you are displaying hard disk space, you must be aware that 1Gb is not 1,000,000,000 but 1,073,741,824 bytes.
- Continue in the same manner as for RAM, for example 2Gb, 4Gb,



8Gb, 16Gb, 32Gb, etc.

In Task 3 you MUST read the Q & A section and make sure you understand it. Read the Q&A and make notes of what you think are the important sections.

- The Q&A will provide you with all the information you need to select a FULL SPECIFICATION of PC for the user. Remember that COST is not an issue here and the highest specification may be the best option. Many web sites have PC configuration pages that will help you.
- Also add all the peripherals that the customer may need.
- Include all the software that the customer may need to complete the tasks that the customer has identified.

Creating an installation guide is easy if you first find pictures of all the components and then explain how they connect to the computer. Remember Health and Safety.

- Different specification for a new customer requires the same as before. But this time a limited budget is in place and alternatives in terms of hardware and software will also need to be identified.
- Also consider the peripherals needed, perhaps a multi-purpose device may be a real alternative.

You must JUSTIFY the difference between the two systems in terms of cost and use.

Discuss the difference in costs from the original specification for customer one and if any performance decrease is worth the reduced costs. Cost vs performance.

- You must identify the problems in using the Internet and downloading files, email and passwords problems.
- They have said that they bring work home, and this can have legal issues with data protection. This should be the main focus for this task.
- Here consider the issues of virus and data corruption.

You are also required to change settings for Word and the desktop to help a visually impaired person. These are simple tasks but you MUST provide screenshot evidence of you completing these changes.

- You are also required to evaluate how the changes you have made will benefit the visually impaired person. Take this step by step and try to understand what effects these changes will have for the end user.

WHAT YOU WILL LEARN IN THIS ASSIGNMENT

Different computers are available to users and that certain computers have specialist uses.

How data is stored and flows around a computer.

To identify risks when transferring and using data from the workplace.

To be able to identify standalone PCs and peripherals.

To be able to specify two systems for different users and budgets and evaluate the systems according to budgets and uses.

To be able to configure a system for a specified user and evaluate why the



changes were made and the benefits to the users.

HOW THIS ASSIGNMENT
WILL BE GRADED (the
assessment criteria)

P1 Describe the purpose of different types of computer.

P3 Describe a standalone personal computer (PC) and show how data flows around the system.

P4 Specify suitable hardware and application software to meet a given user need.

P6 Configure defined software for a given user need.

P7 List the possible data security and legal issues when using a computer in a given situation.

M2 Justify your choice of hardware and software to meet a given user need.

M3 Explain how the configuration of software will help a given user perform their tasks.

D1 Evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.

GUIDANCE NOTES

It is vital that you read all of this assignment before you start. Some tasks require the use of pictures to help your explanations; however, you must identify any important parts of the computers.

Ensure you make your assignment presentation clear and that the tasks are identified.

This is a major assignment and you should check and then check again that you have covered the tasks correctly.

Proofread your work.

If in any doubt then you **MUST** ask for help.



ASSIGNMENT TITLE **Introduction to computer systems**

Back to basics

TASK NUMBER AND TASK DETAIL **Task 1 (P1)**

You have worked on different computers in recent months, some of these have been standalone PCs whilst others have been networked. Some have been brought in by staff to solve problems.

Create a **SIMPLE** guide that explains and compares the differences between:

- Standalone PC
- Apple Mac
- Server
- PDA

Use pictures to help you explain the differences.

Explain the purpose of each of the above, by purpose you need to explain what it does and why it is used.

Task 2 (P3)

Standalone PCs are used mainly in small businesses or in the home.

- Describe the basic components that make up a standalone system (use pictures to help).
- Provide a simple data flow diagram of how data flows around the system.
- Describe how computers store data and information.
- Create a simple table that lists RAM from 1 byte to 1 megabyte.
- Create a simple table that lists hard disk memory from 2 gigabytes to 500 gigabytes.

You **MUST** use the correct memory conventions.

Task 3 (M2, M3)

A member of staff has approached you for advice on purchasing a PC to work from home. You ask questions and obtain the following answers.

A. I create reports, spreadsheets and some graphic work with my digital camera I save using USB and I have a cable for this and a software CD.

A. My children may want to research on the Internet and I will need to access email from home.

A. I transfer some large files, nearly 100Mb.

A. They are usually database files from Microsoft Access.

A. I have lots of pictures and I would like to transfer these to the computer, if possible and I also would like to print my reports which also contain coloured graphs and charts.

A. Cost is not a big problem at this time.

A. Will you also supply all the software?

Given all the information above, you should be able to identify all the hardware



and software needed to meet this customer's needs.

- Present a specification for the **HARDWARE, PERIPHERALS** and **SOFTWARE** including costs that meets ALL the needs of the above.
- You must **JUSTIFY** your choices on your specification.
- State **WHY** your choice meets the needs of the user. (M2), (M3)

Task 4 (P4)

In Task 3 you were asked to provide a specification for a standalone PC. However, the member of staff is leaving the company in a few weeks time and has come to you for more help.

'As you know I am leaving next week and have ordered the PC you recommended. However, I am worried that I won't be able to set it up correctly. I don't know what goes where and I know I will do it wrong and maybe break it, can you help?'

- Create a **simple installation guide** for the PC and **PERIPHERALS**.

Use pictures to help with this, with callouts and text boxes to explain the process.

It is vital that you remember **health and safety** in this task, including **lifting and safe uses of electricity**. It is not expected the ESD will be a problem here, but some mention of this is advised.

Task 5 (D1)

In Task 3 you provided a specification for the end user. It was stated that cost was not an issue at this stage. Since then, another member of staff has contacted you and they have similar uses and requirements. However, this member of staff does have a very limited budget.

- Identify **alternative hardware** to perform the same tasks.
- Identify **alternative software** to perform the same tasks.
- Identify **alternative peripherals**.
- **Justify** your choice for the changes and discuss any problems you may see.
- Discuss the **costs vs performance factors**, and if it is **value for money**.

Task 6 (P7)

The staff have stated that they are going to transfer files to and from work, they have also stated that they both need to access the Internet and email.

- List potential issues with security in using the Internet.
- List possible legal issues with staff taking home information from work.
- List possible problems when transferring files from an unprotected PC.

Task 7 (P6)

You receive a phone call from the first staff member asking for your help. She explains that her son is visually impaired and has problems using the software in its default setup.

She explains that his school has **configured his PC** in the following way and asks if you can do the same for her son.

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AFTER.

Word

- All tool bars are removed leaving only the drop down menus and the format buttons.
- The format tool bar should be moved to the far right.
- The screen should be displayed as a blue background and white text.
- Word should also provide feedback with sound.
- Word should display LARGE ICONS.

Desktop

- Move ALL ICONS to the bottom right of the screen.
- Move all folders to the top left of the screen.
- Move the recycle bin to the bottom left of the screen.

Mouse

- Configure the mouse to be RIGHT HANDED.

Display

- Change the default font size to LARGER SIZE 120 dpi.

Task 8 (M3)

- You must **explain** why the changes you have made to the system, Word and desktop will help the son.
- Consider the fact that he is visually impaired and how the changes will **benefit him**.

ASSESSMENT CRITERIA

P1 Describe the purpose of different types of computer.

P3 Describe a standalone personal computer (PC) and show how data flows around the system.

P4 Specify suitable hardware and application software to meet a given user need.

P6 Configure defined software for a given user need.

P7 List the possible data security and legal issues when using a computer in a given situation.

M2 Justify your choice of hardware and software to meet a given user need.

M3 Explain how the configuration of software will help a given user perform their tasks.

D1 Evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.

GRADE / LEVEL

The work has been graded at Level 2.

EXEMPLAR ANSWER

Task 1 (P1)

This task tests the awareness of the learner that other forms of computers exist. The learners should be able to identify the purpose of each item in the list.

Standalone PCs can be used to perform complicated or power-hungry task such as video editing of large files, graphic creation and editing, etc. This would not generally be possible over a network. Home use is common for standalone PCs.



This said, home networking is becoming very popular.

Apple Macs are generally used to perform high-end graphics and DTP. Until recently they used specially designed CPUs and OS. They have just announced that they will be using Intel processors in the future, although the OS will still be specially designed. Learners are expected to outline the design, use and the different operating system used.

(Servers) Learners should indicate the use of a server on a network and the file storage and access.

(PDAs) Learners should be able to identify these as small computers. Some use a cut down version of Windows, whilst others use Palm OS. Functionality is less than a PC, but they can be used to perform some of the functions of general Microsoft software. Portability, appointments, internet access and emails are some of the functions.

Pictures using call outs and text boxes should be encouraged to help explanations.

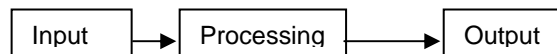
Task 2 (P3)

The learners are expected to provide a simple breakdown of the main hardware. This should include base unit, VDU, keyboard, and mouse. They may also include speakers, scanners and joy-sticks. Although these are not part of a basic system, more and more PCs are provided with some of these as standard and learners should not be penalised for the inclusion of these.

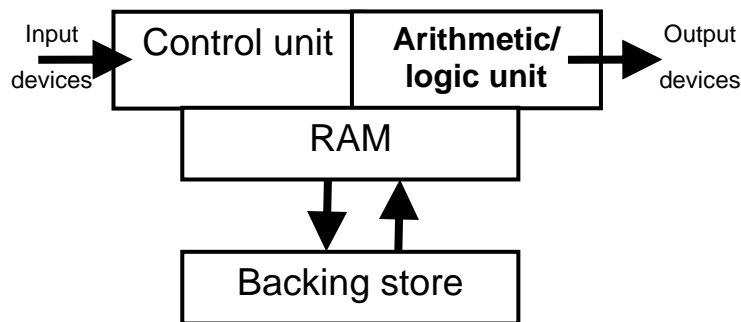
Pictures using call outs and text boxes should be encouraged to help explain.

Data Flow Diagram

At its simplest



More detailed



Learners should be able to describe how computers store data using binary (00110011). They should also be able to understand the process of file management and storage techniques and devices.



The learners should also be able to identify the calculation of memory using a similar table to this.

1 nibble =	4 bits
1 byte =	8 bits
1 kilobyte =	1 Kb = 1 024 bytes
1 megabyte =	1 Mb = 1 048 576 bytes
1 gigabyte =	1 Gb = 1 073 741 824 bytes

Hard disk space in bytes

2 gigabyte =	2 Gb = 2147483648 bytes
100 gigabyte =	100 Gb = 107374182400 bytes
250 gigabyte =	250 Gb = 268435456000 bytes
500 gigabyte =	500 Gb = 536870912000 bytes

Task 3 (M2, M3)

Learners are expected to present a specification for a PC that meets the identified needs of the user. It should be a reasonable specification. Although it's not possible to provide a specification here, at present a P4, with at least 250Gb hard disk and suitable RAM of 1Gb should be expected, and the display should be a flat panel. It is possible that the learner will present individual peripherals such as scanners, printer (colour and laser).

Software is Windows XP and Microsoft Office single user licences.

Costs of these should be included.

Task 4 (P4)

Here a simple guide to setting up the hardware is required. Graphics from the Internet are available to help this or photographic evidence of installation by the learner. However, learners should identify the components separately.

Learners must identify the correct lifting process for case, printer and VDU. The peripherals and connections should also be covered correctly such as USB insertion/removal, printer and VDU connection.

Care in using electrical devices and electricity should also be covered here.

Some of the main issues are not connecting to the power supply until everything has been connected and the connections verified as secure and correct.

Ensuring the power is switched off at the wall before inserting power supply.

Ensuring fingers are not touching any plug pins when plugging/unplugging into the wall sockets.

The awareness of ESD in the building of computers is vital. Although the risk here is minimal, it is a valid point to raise at this time.



Task 5 (D1)

This requires the learners to evaluate the cost of this system compared to the cost of the first system. Costs of the CPUs are the main cost factor in any PC, as well as hard disk space and RAM. Computer 2 should be of a slightly lower CPU specification, but the loss in processing speed and power will probably not be very noticeable to the user, given the uses identified.

Here the learner is to reduce the costs and find alternatives. A reduced specification of hardware is expected. Possibly slower processor, lower RAM and smaller hard drive. Although this is a matter of choice and will be subject to new developments in CPUs. Learners must justify their choices, if valid justifications are made then this would be acceptable.

It would be expected that the learner may look towards Linux and Open Office as software alternatives.

Learners must justify the choice of system which is relevant and meets the user's needs.

Task 6 (P7)

Viruses, spam and ad-ware should be the main examples of issues in using the Internet, although other risks are present, such as phishing, worms, keystroke loggers and trojans.

The Data Protection Act should be covered here. Learners should be introduced to the laws and problems and risks of access to data. This is a complex area, but awareness is required.

The Computer Misuse Act should also be highlighted by the learners. Although details should be kept to a basic understanding. Mass cut and paste from the Internet would not show understandings of the laws.

Learners should also present an outline of transferring viruses from work to home and vice versa.

Task 7 (P6)

Applications:

Learners are expected to initially take a screen shot of the application (Word or suitable alternative) in its default layout.

Removal of toolbars using the view menu.

Tools and options will allow change of screen colour and text.

All other changes can also be selected from this menu.

Screen shots should be taken to show BEFORE and AFTER changes.

Desktop:

Learners are to re-arrange as indicated. It is common for network desktops to reset on re-boot, so these changes should be made and screen shots taken as



soon as the task is completed.

It may be that the desktop cannot be changed in your own establishment, so alternative standalone systems will be required.

Mouse:

The control panel has access to this. Learners will soon discover that they have difficulty in controlling the buttons when this has been completed. A screen shot will evidence the change. The mouse should be reset.

Display the change of font:

This is also accessible via the desktop. Change of font size allows for custom, 120 and 96 dpi (the default). Learners may select custom size if they wish.

Task 8 (M3)

Learners should also consider how these changes will benefit the son. As we don't know the level of disability, we can assume that the colour change aids reading and writing; increase of font size and reduction of screen clutter allows for better viewing.

ANY ILLUSTRATIVE MATERIAL REQUIRED

A range of PC magazines such as PC answers, Computer Weekly and Micro Mart. Misco brochures.

GRADING COMMENTS

All learners will be able to meet the identified pass criteria. More able learners should be able to see the information flow from task to task and also complete merit and distinction grades.

Tasks have been written to be independent from each other, yet linked in terms of applications and skills of the learners. It is expected that some learners will be more able in using applications than others, and a quick demonstration of saving a template in Word may be ideal here to allow all learners to complete the pass criteria.

Internal Verification of Assessment

Student name: Tutor name: IV name:

Criteria	Evidence descriptor	Task number	Agreed	Feedback to assessor
P1	Describe the purpose of different types of computer.	1		
P3	Describe a standalone personal computer (PC) and show how data flows around the system.	1		
P4	Specify suitable hardware and application software to meet a given user need.	1		
P6	Configure defined software for a given user need.	1		
P7	List the possible data security and legal issues when using a computer in a given situation.	1		
M2	Justify your choice of hardware and software to meet a given user need.	1		
M3	Explain how the configuration of software will help a given user perform their tasks.	1		
D1	Evaluate two possible computer systems (hardware and software) that meet a given user need in terms of both performance and value for money.	1		

Assessment agreed:

Grade agreed:

If no, new grade:

Signed IV:

Date:



1. Dell Computers

Dell computers are the largest PC manufacturer and supplier in the world. However, they do not sell computers in stores and all sales are either via the Internet or telephone.

Since these type of sales can be problematic, as the customer will usually not have been able to see the final computer and changes to specifications can take place, this is usually with the buyer's consent and pre-approval.

You decide to ring up for a price on a PC to see how the system works. The telesales representative is very professional and supportive and asks you a series of questions. You tried to note the questions down as they were asked, and here are some of them.

- Q: What do you want to do with the computer?
- Q: What is your budget?
- Q: Do you want a desktop or laptop?
- Q: Will you need to access the Internet?
- Q: Do you want wireless?

As you can see, the answers to these questions and others will determine the specification of PC or laptop you are offered.

About you

You have written to Dell Computers and you have been offered a summer job on the telesales side of Dell. They offer a wide-ranging training programme for staff and would like to ensure that all staff are up to date in new products and technology changes. They also need to ensure that the telesales representatives have a good telephone manner. The manager telephones you to discuss your application and is very understanding of the fact that you are a little nervous about the role. Of course you are new to this role and to support you the manager has provided you a number of PC specifications and recordings of customer's purchases and the conversations.

The role

You receive a large envelope on the Monday morning and a series of MP3 files via email. The MP3s are numbered 1 to 12 and the sheets are specification tick sheets which are also numbered 1 to 12.

You have been asked to match the callers to the specification tick sheets that



have been provided. This seems to be easy at first, but as you listen to the calls you soon realise that some of the customers do not actually know what they want. You also notice that the tick sheets are well designed with questions that lead the telesales staff to advising the customers on the right computer specification, given the needs and uses of the customers.

activities

- In small groups or pairs discuss what common and not so common tasks a computer may be used for.
Consider not just home users, but industry, office, and mobile.
- In small groups or pairs discuss why it is important to have a process that matches users to the correct system.
- In small groups or pairs discuss what problems Dell could face if they did not correctly match a PC to the customers needs.