

Approaches to unit standard 2780

Please note that the following table is not an assessment schedule – it just indicates a range of methods and approaches that could be used to assess candidates against the elements of the unit standard.

Unit Standard 2780 (version 5)

Demonstrate and apply knowledge of a personal computer system

Element statement	Possible assessment tools <i>Methods and approaches that could be used to collect evidence:</i>
1. Demonstrate knowledge of the hardware components of a personal computer system.	Identify four hardware components by device type and function: <ul style="list-style-type: none"> • Labelled diagram • Matching exercise • Oral or written explanation • Multiple choice • Fill in the gaps • Cards – sort under headings Identify data flow and direction between components: <ul style="list-style-type: none"> • Flow diagram • Models and arrows • Oral or written explanation
2. Demonstrate knowledge of the operation of the system and application software of a personal computer.	<ul style="list-style-type: none"> • Oral or written description • Match items in a table and provide a description of each • Multiple choice • Fill in the gaps
3. Operate a printer.	Involves practical activity: <ul style="list-style-type: none"> • Demonstration/observation of candidate carrying out normal printing tasks • Peer teaching session • Simulated faults • Troubleshooting exercise - oral questioning (what would you do if) with practical demonstration (now show me)
4. Complete basic operate and maintenance procedures for a personal computer system.	Involves practical activity: <ul style="list-style-type: none"> • Oral questioning • Demonstration/observation • Simulated faults • Troubleshooting exercise – oral questioning with practical demonstration
5. Demonstrate knowledge of ergonomic principles for the safe operation of a personal computer system.	<ul style="list-style-type: none"> • Written or oral troubleshooting exercise • Oral questioning • Create a brochure on ergonomics – integrate with 5946 (presentation) or 2788 (DTP) or 101 (keyboarding) • Create a presentation on ergonomics – integrate with 5940 (presentation) • Observation of correct procedures over time • Use a commercial/student video with provided questions • Role play ergonomic practice with peers

Unit standard 2780 is compulsory for the National Certificates in Computing (Levels 2 and 3). However, it is not always easy to assess as a single entity. One approach is to assess it in two parts; one part for the theory (Elements 1, 2 and 5) and one part for the practical work (Elements 3 and 4).

This standard also lends itself to integrated assessment. Elements 3 and 4 could be integrated with unit standard 5938 (*Access computer resources via a local area network*), and Element 5 could be integrated with either unit standard 5946 (*Use computer technology to present a topic*), 2788 (*Produce a simple desktop published document to meet a set brief*), or 6743 (*Demonstrate an understanding of ergonomic principles for computer workstations*).

The theory assessment

This can be assessed by written answers, or by oral questioning. Written answers may range from paragraph descriptions to list matching, completing boxes on diagrams, or just simple sentence statements.

Questions for element 2

- 1 What is the purpose of system software?
- 2 State two functions of system software.
- 3 Name one piece of system or utility software that you have used.
- 4 Give the names of two examples of application software.
- 5 Select four software applications. Describe typical output from each one.
- 6 Describe the relationship between system software and application software.

An alternative way of assessing Question 5 could be by a matching list. For example:

Question (sample for illustration only)

Column A contains a list of common software application types. Column B contains a list of common outputs from applications. Draw lines between the software applications and the outputs to show the application which is **best** used to generate that output. A minimum of four correct answers is required.

Column A	Column B
Photo editing package	Business letter
Word processor	Chart of accounts
Email editor	Magazine cover
Text editor	Web page
Desktop published package	Scanned photograph

package

Spreadsheet package

Email message

The following assessment resource provides an example of how both theory and practice outcomes of unit standard 2780 can be assessed by oral questioning alone. Some assessors have wondered about the depth required for evidence relating to element 1. The questions, evidence and judgements in this example indicate the level of response required.

US 2780 Version: 5 Level: 2 Credits: 9
Demonstrate and apply knowledge of a personal computer system

Candidate Name: _____

This assessment assesses all five elements 1, 2, 3, 4 and 5 of 2780

These questions are designed for candidates in a situation where a verbal approach is most appropriate.
 See Special Note 4: *“Demonstration of knowledge can be verbal...as appropriate to the assessment situation”*.

Candidate is to demonstrate knowledge and understanding by either physically showing or verbally explaining or writing.

The tutor/assessor will dismantle the components of the candidate’s personal computer system. The system must contain at least a keyboard, monitor, mouse and power leads.

Questions	Acceptable answers – evidence and judgements	PC
Show how to connect the basic components of your personal computer system.	The candidate correctly assembles the components.	4.1 <input type="checkbox"/>
Show how to power up the system.	The candidate correctly powers up the system.	4.2 <input type="checkbox"/>
Show me or describe an input device.	Candidate identifies mouse, keyboard, scanner, digital camera or any other input device by pointing to or touching device.	
What does this input device do?	Any statement that indicates information is input or entered into the computer.	

Show me or describe an output device.	Candidate identifies monitor, printer or any other output device by pointing to or touching device.	
What does this output device do?	Any statement that indicates information is output (shown, printed, displayed) from the computer.	
Show me or describe a storage device.	Candidate correctly identifies zip disk, disk drive, CD ROM, CD drive, back up tape drives or any other storage device by pointing to or touching device. If RAM is identified, it needs to be identified as temporary storage.	
What does this storage device do?	Any statement that indicates information is stored or saved permanently by or on the device.	
Show me or describe the processing device.	Candidate mentions or shows the location of the CPU or motherboard.	
What does this processing device do?	Any statement that indicates that information is processed by the device.	1.1 <input type="checkbox"/>
How does information flow through the components you have identified?	Any statement that indicates the candidate understands how data is input, processed and then output through the identified components.	1.2 <input type="checkbox"/>
<hr/>		
The computer you are using has which operating system software?	Candidate must mention the correct OS software on their current machine.	2.1 <input type="checkbox"/>
What is the purpose of operating system software?	Any statement that indicates the candidate understands that the operating system software manages the application software and computer functions such as printing, saving etc.	2.1 <input type="checkbox"/>
How does this interact with the application	The candidate may correctly demonstrate how to open any	2.3 <input type="checkbox"/>

software?	application, or make a statement which indicates how the system software manages the features of the application, eg saving, printing etc.	
Name four different application software packages which are on your machine, or which you know of. What is the purpose of each of these?	At least 4 different examples are given along with their purpose - eg Photoshop, QuarkXPress, Flightcheck, Eudora, Netscape etc. eg, imaging, layout, pre-flight, imposition, email, browsers etc.	2.2 <input type="checkbox"/>
Print out data or a file from your computer.	Candidate has correctly printed the data from their computer onto paper.	3.1 <input type="checkbox"/>
What does the message "Paper tray is empty mean?" How do you fix this problem?	Any statement/action that indicates there is no paper in the tray that the operator is trying to print from. Any statement/action that indicates the candidate knows to put paper of the correct size into the correct tray, or change to the correct tray selected to print from.	
What does the message "(name of printer) could not be found" mean?	Any statement/action that indicates the candidate knows the printer is not switched on not connected or set up correctly ie correct PPD. If another problem occurs when printing out the file/data, the candidate is expected to recognise the problem, correct it and print out the data/file correctly.	3.2 <input type="checkbox"/>

Demonstrate how you use your computer with regard to safe ergonomic principles.

How should you sit in your chair?

Describes or demonstrates correct position, arm, leg body joints should be at 90°.

How high should the seat be for you?

Describes or demonstrates correct position, so feet on floor or footrest so that thigh and leg at 90°.

Where should you have your feet?

Describes or demonstrates correct position. Feet on floor or footrest so that thigh and leg at 90°.

How far away should your monitor be?

Describes or demonstrates correct position. At least one arm length from the face.

How far away should your keyboard be?

Describes or demonstrates correct position. Elbow joint at 90°, and no undue stress on wrist.

How should you position your mouse?

Describes or demonstrates correct position. Elbow joint at 90°, and no undue stress on wrist.

How often should you get away from the computer?

Every hour or as per company policy.

How often should you have micro-pauses?

Every ten minutes or as per company policy.

Demonstrate or describe two exercises that may help when using the computer.

Describes or demonstrates two appropriate exercises.

5.1 □

Describe two environmental conditions you need to consider when positioning your system.

Any statement that indicates how any two of lighting, dust, temperature/ventilation, cables and furniture are to be correctly considered.

5.2 □

Looking at your workspace, show how the components comply with ergonomic principles.

Any statement that shows how at least two components apply/help ergonomic principles - eg keyboard rest, UV filter, anti-glare screen, mouse design, printer location.

5.3

Show how you take care of your personal computer system.

Candidate expected to indicate any cleaning required (keyboard, mouse, screen, desk etc) and/or use of any protection or maintenance software or procedures (Norton's Anti Virus, Norton's Disk Doctor etc).

4.4

If it has not occurred naturally during the assessment, the tutor/assessor is to disconnect and/or loosen plugs or create other simple hardware faults for making a component faulty.
The candidate is to identify the fault/problem.

4.3

Date of assessment: _____

Tutor/assessor: _____
