

TEACHER'S NOTES

ICT Levels 1 and 2

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EDEXCEL FUNCTIONAL SKILLS PILOT

TEACHER'S NOTES

ICT Levels 1 and 2

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Draft for pilot centres

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How to use the Functional Skills ICT materials

These materials have been developed to help learners acquire the skills that are outlined in the QCA Functional Skills Standards for ICT under the three skills areas of 'Use ICT systems', 'Find and select information', 'Develop, present and communicate information'.

The structure of the materials

The chapters follow the sequence of the standards, with each chapter divided into sections matching the coverage of the standard or standards indicated. The standards are given at the start of each chapter, using the wording from the official document on the teacher pages and an adapted version, more appropriate to learners' needs, on the learner pages.

This structure should not be taken as a recommended teaching framework but merely as the method deemed most appropriate to demonstrate complete coverage of the standards. It is expected that teachers will organise their teaching sessions according to the needs, level of experience and interest of their learners, and the contexts in which they are working.

It should also not be assumed that material included here will form part of the functional skills assessment: by their very nature, the assessment will cover only part of the standards.

Level differentiation

The learner's materials are for learners working at Levels 1 and 2, and the content and activities designed to be accessible to Level 1 learners. No attempt has been made to differentiate between the two levels in the pages of the learner's materials. The teacher's notes, however, use bold text (presented in a tinted box) to identify those activities and teaching points that are intended for Level 2 learners. The basis of the design of the materials is that, as in the standards, differentiation will be as much by outcome as by activity. The other key level differentiators – complexity, familiarity, technical demand and independence – are reflected in the tasks, which are designed to show the progression that is a feature of the standards:

At Level 1, learners would be expected to:

- identify the ICT requirements needed to solve a straightforward task and apply their knowledge and understanding to produce an appropriate solution (complexity)
- apply their knowledge and skills within a non-routine but familiar context (familiarity)
- apply a range of techniques in a number of applications to produce an appropriate outcome (technical demand)
- solve problems that are essentially instructor/tutor guided, demonstrating the confidence to make informed choices and knowing when to seek guidance (independence)

At Level 2, learners would be expected to:

- analyse multi-step tasks and separate the components, identifying the relevant ICT requirements and applying their knowledge and understanding to produce an appropriate solution (complexity)
- apply their knowledge, skills and understanding within non-routine and non-familiar contexts (familiarity)
- demonstrate the application of a wide range of techniques across several applications to produce an appropriate outcome (technical demand)
- solve problems independently, overcoming challenges to produce successful outcomes (independence)

This differentiation between levels requires the teacher to provide more guidance at Level 1 than at Level 2. With Level 1 learners, for example, teachers may choose to use a simplified task to allow a learner to practise the skill within their prior experience, whereas they may choose to enhance the challenge for Level 2 learners by using a more complex task that matches the learner's experience (more specific suggestions for differentiation are contained in the teacher's notes).

The activities have been developed with this varying guidance in mind, so that later activities in each section are expected to be undertaken with less teacher support. The expectation is, though, that all learners will be engaged in the learning process through discussion and social interaction.

The elements of the chapter

The chapters follow the standards and are divided into sections broadly corresponding to the coverage of those standards. Within each section there are two main sub-sections: 'Learn the skill', which provides information and facts for discussion and exploration; 'Develop the skill', which provides activities to practise the skills, test understanding and extend knowledge. The pages of the learner materials also direct the learner to additional electronic resources in the form of 'skills demonstrations' (captivates) and 'assets'.

» Skills demonstrations are screen-based demonstrations of points made in the text, which the learner can click on for instruction or information.

📺 Assets are files of information provided or stored digitally, which may include photographs, sound clips, databases, spreadsheets, etc. These may also include material learners will need to perform the activities (e.g. tables to complete).

These resources are available on the website, at the same point where these materials were available for downloading.

A note on resources and providing a safe working environment for learners

Any suggestion for software to be used with activities is not meant to be exclusive. It is understood that different centres will have different resources, and that some centres will allow learners only limited access to the internet, will not accept downloading and will allow learners only partial control over their work-station. The resources have been developed on the understanding of variations in resources, access and control, but there are still bound to be activities that present challenges for some centres. Where possible, suggestions for alternatives have been given in the teacher's notes; teachers are expected, in any case, to adapt activities for the use of their own favourite, or personally developed, resources.

These restrictions on internet browsing, downloading, and altering machine configurations may create difficulties on functional skills courses, where the standards require learners to actively engage in such tasks. One possible technical solution to this problem is to employ **virtual machine software**, which allows an instance of an operating system (usually Windows or Linux) to be run in a virtual environment that is isolated from the real machine. Changes made in the virtual machine have no effect on the real machine and can be completely discarded when the virtual machine is closed. Alternatively, a working state can be preserved in the virtual machine by taking a 'snapshot' before closing the virtual machine.

A virtual machine can be used to safely browse the internet, download and install software, and explore machine settings, with no risk to the real machine or associated network.

The best-known virtual machine products are Microsoft Virtual PC (currently free) and VMWare Workstation.

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1 Using ICT systems

(pages 2–18 in the learner materials)

Skill	Coverage	Unit learners
Level 2 content in bold	Level 2 content in bold	
1 select , interact with and use ICT systems independently for a complex task to meet a variety of needs	1.1 use correct procedures to start and shut down an ICT system	A Start and shut down an ICT system correctly
	1.2 select and use a communication service to access the internet	B Use a communication service to access the internet
	1.3 select and use software applications to meet needs and solve given problems	C Select and use software applications
	1.4 recognise, select and use interface features effectively to meet needs	D Recognise, select and use interface features
	1.5 select and adjust system settings as appropriate to individual needs	E Select and adjust system settings
2 use ICT to effectively plan work and evaluate the effectiveness of the ICT system used	2.1 use ICT to plan work and organise work; use ICT to effectively plan work; review the effectiveness of ICT tools to meet needs in order to inform future judgments	F Use ICT to plan work
3 manage information storage to enable efficient retrieval	3.1 work with files and folders to organise, store and retrieve information; manage files and folder structures to enable efficient information retrieval	G Work with files and folders
	3.2 insert, remove, label and store media safely	H Insert, remove, label and store media safely

A Start and shut down an ICT system correctly

Discuss the correct way to start and shut down computers. Look at network systems and the process of logging on.

If a machine requires a user to log on, the user must enter a user name and password that the machine recognises if they are to be able to access programs and other facilities on the machine.

Users who are required to log on may have limited privileges. Arrange for a technician to talk to learners about networks and the different facilities available to ordinary users and administrators.

Use the captivate (the skills demonstration) to talk about passwords. Talk about the importance of shutting down correctly and the consequences of not doing so.

Activities

A1–A3: Explore good passwords, using a combination of letters and numbers. Help learners follow the correct shutting-down procedures.

B Use a communication service to access the internet

Talk about the methods of connection and the different speeds. Use the captivates to show connection to the internet and the dial-up process.

Activities

B1–B3: Help learners find out information about broadband services.

Level 2

To help with selecting a service and to gain a better understanding of speeds, ask learners to test the speed of their internet connection www.speedtest.net/www.resources.zdnet.co.uk/speedtest/. From the results, can the learners decide whether it is broadband or dial up?

C Select and use software applications

This section is about the different types of applications used on computers. Each application on a

computer can be identified by its name and often by an icon. Applications that are used frequently often have their icons on the desktop.

Learners may not be familiar with some of the more uncommon icons, e.g. those for graphic editor and multimedia editor.

Activities

These activities encourage learners to try out various types of application.

C1: Help learners to fill in the table. Discuss their choices. Point out that some applications may be better for certain tasks than others.

C2–C6: Learners will need access to various applications, including word processing, database, spreadsheet, email and graphic editor. If any of these applications are not available – or if access to them is limited – you could undertake the activity as a demonstration or ask learners to complete it at home. Activity C5 will require internet access.

Level 2

As an extension to Activity C1, ask learners to find out what user application programs are available on their computers. Ask them to record the name of each one and what type of work it is designed to do. For C6, ask learners to also explore wmf (vector images). Learners may confuse bitmap and vector images, so these need to be explained. *Bitmaps* are made up of a collection of coloured pixels and are edited by changing the colour of selected pixels. They do not scale well. However, *vector* images are made up of points, lines and geometric shapes. The vector image file stores information about each object; they scale well because the objects in the drawing are drawn to the required size each time the image is displayed. Most non-photographic images used in advertising are vector images. Well known vector-drawing programs include Corel Draw, Adobe Illustrator and AutoCAD.

D Recognise, select and use interface features

This section deals with the practical controls and features learners will need to be able to use computers effectively.

Activities

Activities D1–D4 deal with mouse techniques. For Activity D1, make sure that those learners who tend to open programs from the Start menu understand that they can use icons to do this; make sure there are

icons available on their desktop. For D2–4, ensure learners have access to a text file. Learners may need support when selecting and moving text. Encourage learners to spot the different shapes of cursor when completing the activities.

Activities D5 and D6 are about on-screen controls. Help learners to fill in the table.

Activities D7–D10 deal with keyboard shortcuts. Talk about the benefits of learning and using keyboard shortcuts.

Level 2

Tell learners about the helpfulness of wizards. On a machine running a version of Windows, demonstrate to learners how to use a wizard (or ask them to do so), such as to install camera software on a computer. Show learners that the back button can be used to retrace their steps and that once the software has been installed it will appear in the control panel window.

E Select and adjust system settings

If learners are not allowed to adjust the system settings of their computers, you could either perform this section as a demonstration, or suggest learners try it at home. Draw learners' attention to the captivate, too, which shows many of these adjustments being made.

Look at the basic adjustments that can be made by the user to a computer. Talk about pixels (picture elements) being the smallest area of the screen that can be controlled.

Activities

E1–E5: Some of these tasks assume you are running a version of Windows.

E3: The slider in this activity may be a new control to the learners.

E5: Learners may like to experiment with changing other mouse settings to suit the way they work.

Level 2

Introduce learners to clock and date adjustments. Can they find and open the link from the desktop? Show learners the dialog linked to the clock that allows the clock to be adjusted. Ask them to make time and date adjustments but remind them to reset the settings before closing.

F Use ICT to plan work

Emphasise the importance of planning by talking about daily activities, e.g. going on a train journey, booking an appointment at the doctor's, cooking without a recipe. Talk about how calendars and diaries on computers can help with planning. Look at the capture for making an entry into a diary. Also discuss how learners need to plan what type of application they need before they start to work, e.g. word processor or spreadsheet?

Activities

F1: Ensure learners make the appointment within the lesson time; otherwise, learners will have to change the time on their computer clocks for this activity.

F2: Help learners to choose a program with which they are not familiar. If they are allowed, learners could download, install and use one of the following four free applications (they will probably need to learn how to use the application from the documentation and/or Help file that comes with it):

Inkscape (a drawing application):

<http://www.inkscape.org>

Audacity (an audio recording application):

<http://audacity.sourceforge.net>

Open Workbench (a project-planning application):

<http://www.openworkbench.org>

FreeMind (a mind-mapping application):

<http://freemind.en.softonic.com>

You could, alternatively, give this activity to learners to do at home.

Level 2

Learners need to be able to choose the right tools for a task. Discuss in further detail what type of output is required. How complex is the task? Do they have the necessary knowledge and skills? How long will the task take to complete? Is there an ICT tool specially suited to the task?

G Work with files and folders

Talk about file names. Modern operating systems allow the file name to be up to 256 characters in length,

although most file names are much shorter than this. The name identifies the file and is shown to the user when files are listed in a file viewer.

Talk about file extensions. The filename extension should not be changed, as this identifies the application that created the file and is used when the file is opened in the application for editing. The name given to an executable file – a file with the extension 'exe', 'dll' or 'bat' – should not be changed, otherwise the program may fail to operate correctly.

Think of example folder names: for example, *Final Publications* could perhaps be shortened to FinPub, but FP would be too short and does not give enough information.

Level 2

Ask learners to practise creating, moving and deleting files to and from folders to the desktop. They should explore the shift and Alt keys when moving files to the desktop – what happens if they drag the file to the desktop without holding down any key? Does the mouse cursor indicate the action?

Ask learners to create a shortcut to the desktop.

H Insert, remove, label and store media safely

Discuss how files on portable media are made available to the computer, CD-Rs, DVDs are inserted into an optical disk drive, a USB flash memory device is inserted directly into a USB socket and is automatically recognised. External hard disks may also use a USB interface. Once loaded, the device appears on the system as a drive, and the files are listed.

Activities

H1–H6: Learners will need CD-R and CD-RW for these activities.

H3: Emphasise that CDs and DVDs should be handled with care to avoid scratches and should be stored in protective sleeves. USB devices have protective housing, but should not be exposed to extremes of temperature.