

ICT

Chapter 1

Using ICT systems

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ICT

Keith Jeram, Alan Meechan and Alison Meechan

Draft for pilot centres

Chapter 1: Using ICT systems

- Chapter 1:** Using ICT systems
- Chapter 2:** Safety and security
- Chapter 3:** Sources of information
- Chapter 4:** Using ICT-based information
- Chapter 5:** Entering, developing and combining information (part A)
- Chapter 6:** Entering, developing and combining information (part B)
- Chapter 7:** Presenting information
- Chapter 8:** Communicating using ICT
- Chapter 9:** Test preparation

How to use the Functional Skills ICT materials

These materials have been developed to help you learn the skills that are listed in the Functional Skills Standards for ICT, which the Qualifications and Curriculum Authority (QCA) produced in 2007.

How have these materials been structured?

The chapters follow the standards, and each chapter is divided into sections that cover the individual standards in sequence. You will find the standards at the start of each chapter, although we have adapted the language slightly to make it clear what you are expected to learn.

Just because the materials follow the standards in this way, it does not mean that your teacher will necessarily teach them in this order. They will most likely organise your learning sessions to suit your individual needs.

Who are these materials aimed at?

These materials are for learners working at both Level 1 and Level 2. The content and activities have been written to be accessible to learners at both levels. Your teacher will know which activities are most suitable for you.


In functional skills, the difference between levels is more to do with what you produce than with the activities you are asked to do. The differences are measured by the **complexity** of the activities, your **familiarity** with the context you are working in and the task you've been asked to perform, how **technically demanding** the task is and how good you are at working **independently**. The materials, and their activities, have been developed with this in mind.


We hope that the materials will engage you in the learning process, and give you the opportunity to discuss what you have learned and to see how other learners approach the same tasks.

What will you find in each chapter?

The chapters follow the standards and are divided into sections that cover what is laid out in the standards. Within each section you are asked to 'Learn the skill', which gives you information and facts for discussion and exploration; and you are asked to 'Develop the skill', with activities that let you practise the skills, test your understanding and take your knowledge further.

You will also find two other features on the pages that are designed to increase your understanding. These are electronic resources in the form of 'skills demonstrations' and 'assets'.

 Skills demonstrations are screen-based demonstrations of points made in the text, which you 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 you will need to perform the activities (e.g. tables to complete).

We hope you find it easy to learn from these materials and that you enjoy using them.

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1 Using ICT systems

By the end of this chapter you should be able to:

- interact with and use ICT systems on your own to meet needs
- use ICT to plan work and evaluate your use of ICT systems
- manage information storage


You will learn to:

- use correct procedures to start and shut down an ICT system
- use a communication service to access the internet
- select and use software applications
- recognise and use interface features effectively
- adjust system settings to meet your needs
- use ICT to plan and organise work
- work with files and folders
- insert, remove, label and store media safely

A Start and shut down an ICT system correctly

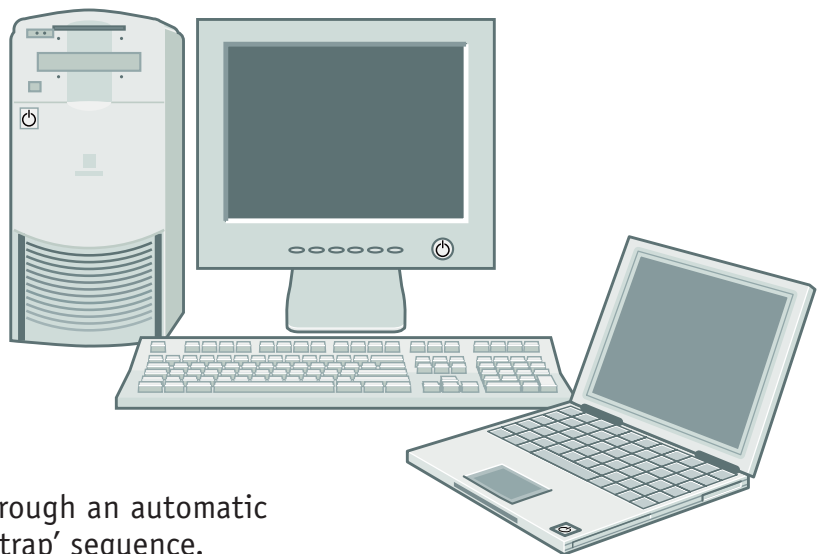
Learn the skill

Starting up

The on/off power switch for modern PCs is on the front of the case. It is usually the largest button. The power switch for a laptop will be seen when the screen is lifted. It may have this symbol  on it. Press and release the power switch to start the computer.

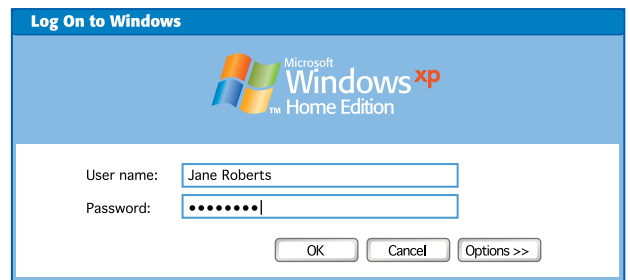
A desktop computer with a separate monitor will have a separate on/off switch. Switch on the monitor before switching on the computer.

When the computer starts, it will go through an automatic start-up sequence, known as the 'bootstrap' sequence. While this is happening, various texts will appear on the screen. If the machine is not connected to a network, the user will be able to access programs at this point.



Logging on

If the machine is connected to a network, the user will need to **log on**. To do this, a user name and a password have to be entered into a log-on dialog box. Some users may have limited access to certain programs, files and facilities.



Closing down

You should almost *never* switch off a computer directly from the power switch. Doing so could lose work and corrupt the operating system (the software that runs the machine), which will stop the machine operating correctly the next time it is switched on.

To close down correctly you should:

- save any current work
- close down any opened user programs
- close down the machine, using the built-in procedure (e.g. clicking the mouse on the button on the screen named 'Shut Down')

This will close down the operating system correctly and automatically remove power from the machine.

Develop the skill

- A1** Look at a number of different computers, both desktop machines and laptops, and identify the power (on/off) switches.
- A2** Choose a user name and password that could be used to log on to a computer (people often use their own name as the user name). A good password is at least six characters long and contains both upper- and lower-case letters and numerals. It is important to be able to remember a password rather than write it down somewhere.
- A3** Find out how to correctly close down any computers that you are allowed to use.

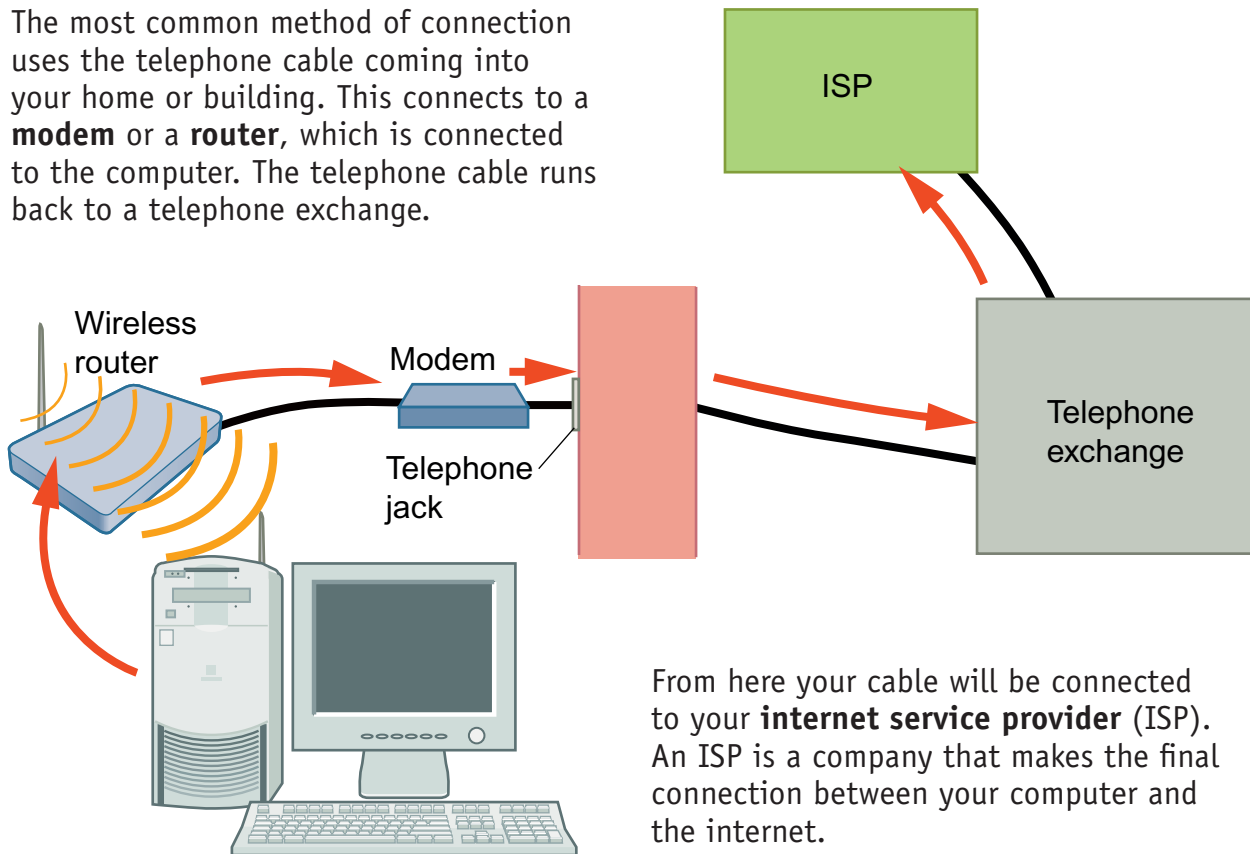
B Using a communication service to access the internet

Learn the skill

Connecting

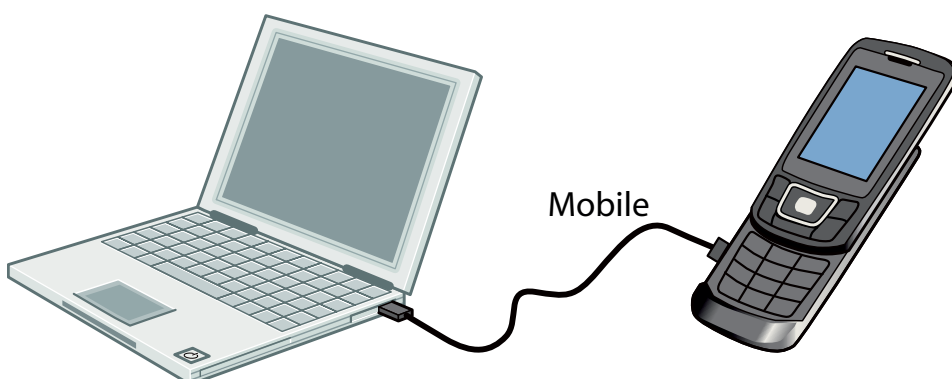
To connect your computer to the internet, you will need some hardware (equipment) and some software (computer program).

The most common method of connection uses the telephone cable coming into your home or building. This connects to a **modem** or a **router**, which is connected to the computer. The telephone cable runs back to a telephone exchange.



From here your cable will be connected to your **internet service provider (ISP)**. An ISP is a company that makes the final connection between your computer and the internet.


Away from home, a laptop can use a mobile phone or similar hardware, acting as a **wireless modem**, to connect the computer to the telephone system using radio waves. The telephone network provider for the mobile phone will provide the connection to the internet and charge for the time you are connected (online).



Broadband connection

This is the name for high-speed and permanently connected access to the internet. A broadband connection provided by a normal telephone line allows the line to be used for telephone calls as well. At the same time it provides an 'always on' connection to the internet. The computer is connected to the telephone system via a router.

Dial-up connection

 This is a **connection** to the internet that is made by automatically 'calling' a telephone number provided by the ISP. The connection is made through a modem. While you are connected to the internet, you cannot use the telephone line to send or receive normal telephone calls.

A dial-up connection through a modem can transfer up to 56 kilobits of data per second (1 kilobit = 1024 bits). A broadband connection through a router may be able to transfer up to 8 million bits of data per second (8Mbps), depending on the ISP and the price.

A fast broadband connection is most useful when downloading large files (such as videos) from the internet, and for streaming data, such as when listening to an internet radio station.

Develop the skill

B1 Broadband is not available everywhere in the UK. Use the internet to find out if broadband is available in your area.

B3 Find out about other forms of communication services that are available on the internet and what they are used for. Two very common ones are ftp and email.

B2 Write down **three** advantages of a broadband service compared to a dial-up service.

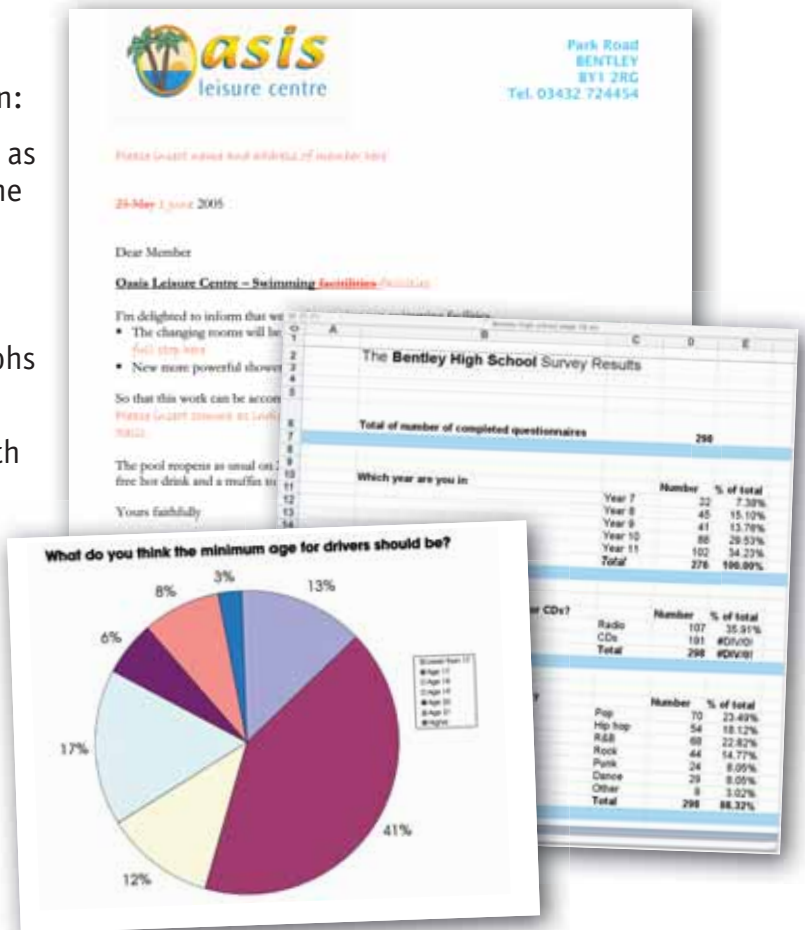
Hint Do a web search on broadband availability

C Select and use software applications

Learn the skill

Computer programs that allow users to work on information are known as 'user applications' or just 'applications'. You can:

- use a word-processor application such as **Word** or **Open Office Writer** to combine words, tables and pictures
- use a spreadsheet application such as **Excel** or **Lotus 123** to work with numbers, calculations, charts and graphs
- use a database application such as **Access** or **Lotus Approach** to work with information about large numbers of things
- use a browser application to access websites on the internet
- use an email client application to send and receive electronic mail
- use a graphic editor application to create and edit digital images
- use a multimedia editor application to record and edit audio and video



Develop the skill

C1 This table contains a list of tasks which you can complete with different user applications. In each row of the second column, show which application you would use for the task (in some cases you might want to enter more than one). Use the abbreviations below for the different applications:

- | | |
|--------------------|----------------|
| W – word processor | E – email |
| S – spreadsheet | G – graphic |
| D – database | M – multimedia |
| B – browser | |

Task	Application
Write and print a letter	
Store details of all the videos available for hire in a video shop	

- C2** Open an email application. Open one of the emails and copy the text of the email.

Now open a word-processing application. Open a new file and paste the copied text into the file. Save and close the file.

- C3** Open a new word processing file. Create the following table:

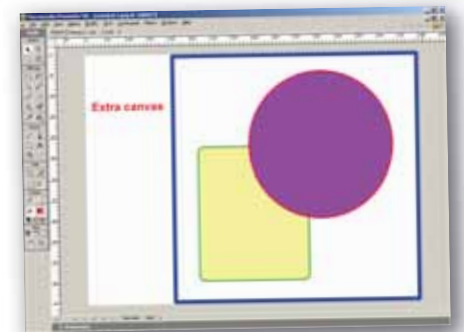
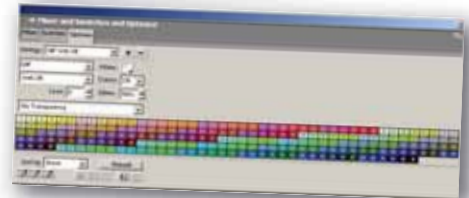
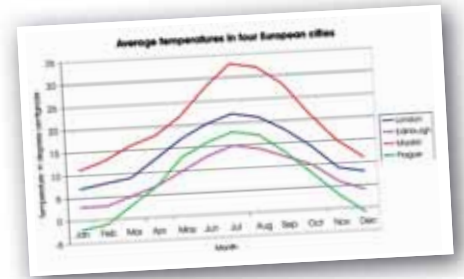
7	8	=C4*D4
---	---	--------

Select the table and copy it. Then open a spreadsheet program. Select cell C4 and paste the copied information. Can you explain what happens?

- C4** Ask your teacher for a database file. Open a table in the database. How many records are there in this table? Add a new record to the table. Enter some data of your own. Make sure the data you enter is the correct type for each field.

- C5** With your teacher's permission, use a browser to go to the <http://office.microsoft.com/en-gb/clipart/default.aspx> website. Select and download two pieces of Clip Art from this website.

- C6** Select and open a graphic editing program, such as **Paint** or **Photoshop**. Use the editing tools to change the colour of part of your chosen clip art pieces.



The Safe to Drive? Test Survey Results				
Total of number of completed questionnaires				34
1 Are you Male/Female?				
	Male	25	46.2%	
	Female	20	53.7%	
	Total	34	100%	
2 What do you think the minimum age for drivers should be?				
	Lower than 17	1	0	1.9%
	Age 17	10	12	22.2%
	Age 18	6	11	27.0%
	Age 19	2	5	13.0%
	Age 20	2	8	16.0%
	Age 21	1	2	5.0%
	Higher	2	28	58.0%
	Total	25	29	54

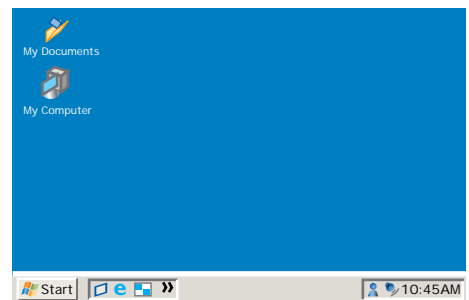


D Recognise, select and use interface features

Learn the skill

Desktop

On a computer, the desktop is the user's work area. The desktop may contain small images, known as icons, that are linked to applications or files.



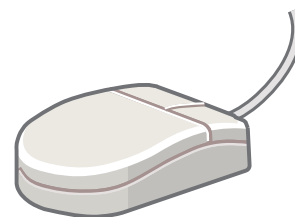
Windows


An application opened on the desktop is shown in a window. Windows can be moved, overlapped and have their size changed.



Controls

The most important input controls are the keyboard and a pointing device, usually a mouse.



The mouse is moved by hand over a flat surface to control the position of a cursor on the screen. The shape of the cursor varies depending on the task; the most common shape is an arrow .

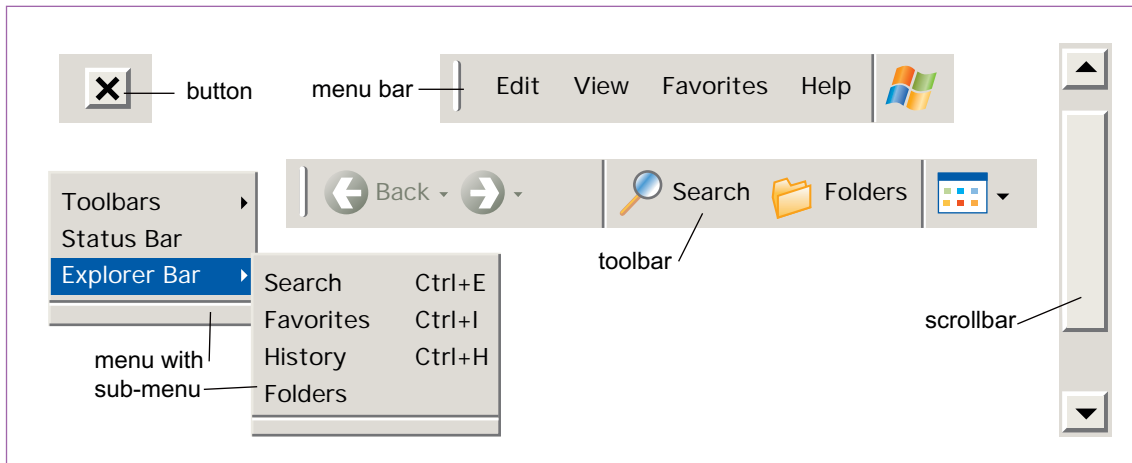
The mouse – the job of the mouse is to perform an action on the screen that makes the computer do something. To do this, put the tip of the arrow over something on the screen, and press and release the left mouse button once (known as 'clicking') or twice, rapidly (known as 'double-clicking').

By pressing and holding down the left mouse button and then moving (dragging) the mouse, you can also use the mouse to make a selection, move a window or an object. If something is moved in this way, it is known as 'drag-and-drop'.







Keyboard – the main job of the keyboard is to enter text, but you can also use combinations of keys to do some of the mouse jobs.

On-screen controls – certain applications have on-screen **controls** to let the user work with the application. The ones in the illustration are the most common.



Develop the skill

Mouse techniques

- D1** Select an icon on the desktop for an application – e.g. . Use these two ways to open the application.
- Click on the icon with the left mouse button. The icon will be highlighted (change colour) to show it is selected. Then press the Enter key on the keyboard to open the application.
 - Double-click on the icon to open the application.
- D2** Open a text file. Use each of these methods to select text.
- Position the mouse cursor over a word and double-click.
 - Put the mouse cursor over the text. Press and hold down the left button and drag (move) the mouse down to highlight the text. Release the button. Move the cursor outside the selection and click.
 - Place the cursor on the selection, press and hold down the left button. Drag the mouse to put the cursor outside the selection. Release the button to move the selected text to the new place.
- D3** What is the meaning of each of these mouse cursor images?
-   
- D4** A mouse may have a small wheel, usually on its top surface. Find out what this does. If your mouse has one, try using it.

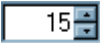
On-screen user controls

- D5** Open an application. Find an example of each of the on-screen user controls and see how it works.



Name of control	What it does
	Starts something, like a search in a search engine, or confirms an action, perhaps in a dialog box.

Complete the table by putting the name of the on-screen user control in the first column to match the description.

- D6** What name is given to the control shown here?  What does it do and how is it used?

Keyboard shortcuts



- D7** Open a user application. Look at one of the menus. You should see that some of the letters are underlined, e.g. F on the 'File' menu. The underlined letter is an 'accelerator key' and is a way of using the keyboard to open a menu. For the 'File' menu, you would open it by pressing and holding down the Alt key, then pressing the letter F key.
- D8** Use this way to open a menu and then one of its sub-menus.
- D9** What are 'keyboard shortcuts'? Which of these keys (Ctrl, Alt, shift) is used to create a shortcut? Are there any mouse actions that cannot be made by a keyboard shortcut?



- D10** Choose an application. What 'keyboard shortcuts' are there? A good place to look is in the Help file. Why do users with good keyboard skills often prefer to use keyboard shortcuts rather than the mouse?

E

Select and adjust system settings

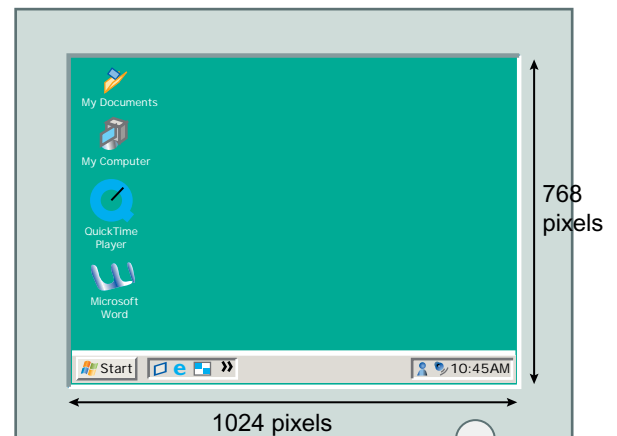
>> You can make basic adjustments to a computer to suit your needs, i.e. changing the size or colour on the screen to make things clearer, or adjusting the audio controls or size of the windows.

💡 Learn the skill

Display

The space available on the computer desktop depends on the size of the monitor (computer screen) and on its resolution, measured in pixels. A common screen resolution for general work is 1024×768 pixels, but resolutions can vary from 800×600 to 1920×1080.

The higher the resolution, the more information can be displayed, but the smaller the detail on the screen. Reducing the working resolution will make things bigger on the screen, but fine detail may be lost. Having a physically larger screen increases the size of the detail.



Colour depth

All modern computer screens use a wide range of colours, depending on how much memory they have. The range is from 256 colours (8-bit colour depth) to 16.7 million colours (24-bit colour depth).

Audio

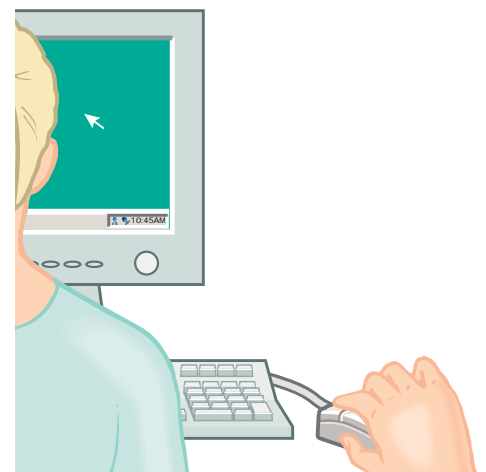
Desktop and laptop computers have built-in audio systems. This means they can play speech and music files, and play audio tracks from video DVDs. A volume control on the screen allows the sound level to be adjusted.

Windows

Information on a computer screen is shown in a window. There can be several windows open at once and they can be moved, sized and layered (placed one above another). Windows are usually rectangular, but can be any shape. A window may fill the whole screen or only part of it.

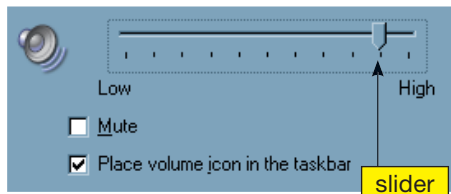
Mouse

A computer mouse controls the position of a pointer on the screen. Moving the mouse moves the pointer. The computer can be controlled by placing the mouse pointer and clicking a button on the mouse.







Develop the skill

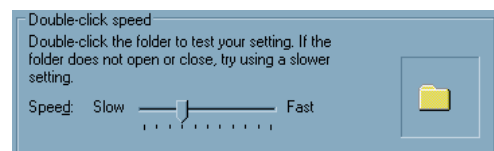
- E1** Put the cursor over a blank area of the desktop and click the right mouse button. If the machine is running a version of Windows, then a settings dialog box similar to the one on the right will open. Use the dialog to find out what resolution the monitor is working at, and the colour depth.
- E2** Use the screen settings dialog box to change the resolution of the screen. What do you notice? (It will help to open an application that you know well.)
- E3** Use the control panel to open the audio system. It will have a name like 'Sounds and Audio Devices'. Find the controls for volume. They should look something like this (below):



Change the volume setting by dragging the slider on the volume control. What happens if you 'check' (tick) the box labelled 'mute'?

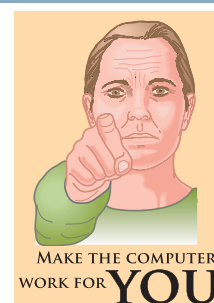
- E4** Select and open an application icon.
- If the window fills the entire desktop, click on the Normal button  to reduce its size.
 - Put the cursor over the title bar . Press and hold down the left mouse button and drag the mouse to another position. The window should follow the mouse.
 - Release the mouse button to drop the window at its new place.
 - Put the cursor over the border of the window at one of the corners. The mouse cursor will change to a double-ended  arrow.
 - Press and hold down the left mouse button and drag the mouse. The window should change size as you drag the mouse.
 - Click on the Normal button  once more to restore the window to maximum size.

- E5** Use the control panel to open the dialog that controls the settings for the mouse. Find the controls for double-click speed. They should look something like this (see right):



Try setting it to the slowest setting and then the fastest setting. Test the result each time by double-clicking on the folder icon in the dialog. You may not be able to double-click fast enough on the fastest setting for it to be recognised.

Adjust the setting to a speed that suits you and then close the dialog.



F Use ICT to plan work

Planning involves thinking about things that will happen in the future and making decisions to avoid problems.

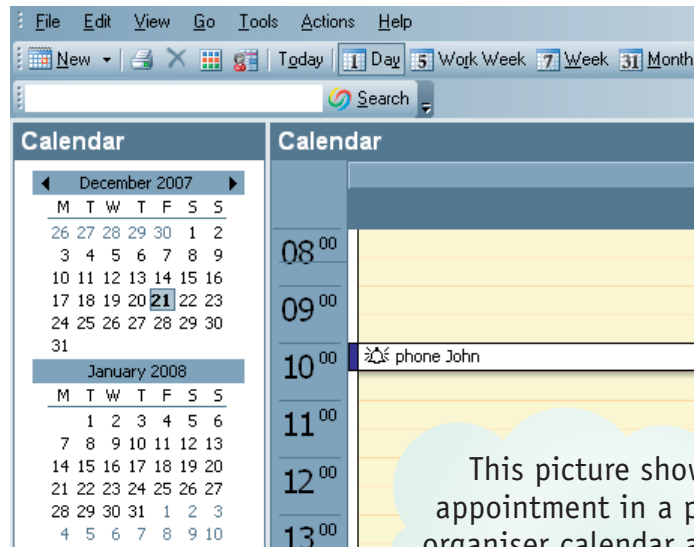
ICT tools can help you to plan how to use your own time (personal organiser), and to plan work that may involve other people, materials and facilities (project planning).

Learn the skill

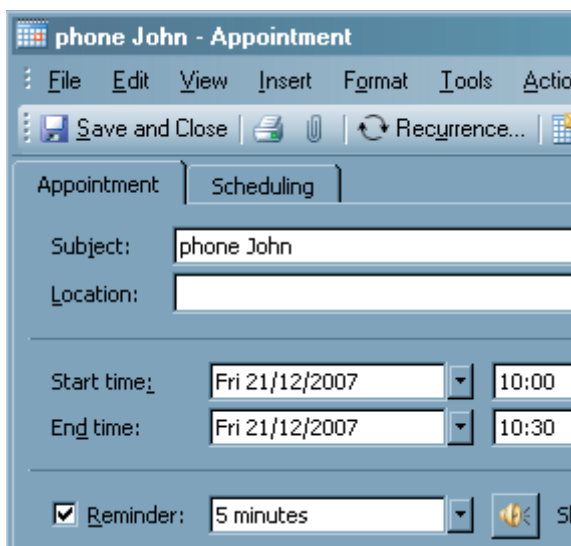
Personal organiser

A personal organiser is based on a calendar and helps you to plan appointments and tasks by **making entries** in a diary, setting reminders, making notes and using email.

The organiser can be in a hand-held computer called a 'personal digital assistant' (PDA) or be part of a user application on a desktop or laptop.



This picture shows an appointment in a personal organiser calendar and diary with an entry to make a telephone call on Friday 21 December at 10.00am.



The appointment can be opened to show more detail. Notice that a reminder has been set for five minutes before the appointment time. At 09:55 am the computer will play a sound file (of a bell perhaps) to warn the user.

Choosing the right tools

In ICT, planning is also about choosing the correct type of application to carry out a task: if you need to produce a long text document with a few calculations and some simple drawings, perhaps everything can be done in a good word processor. But if there are lots of calculations, then you will find it easier to do this part of the work in a spreadsheet.

Similarly, if the drawings are complex, then it will be easier and quicker to produce them in a drawing program.

It is always worth using the right application for the task, even if it means putting in more work at the beginning to learn to use it effectively.

Develop the skill

- F1** Locate a personal organiser application. Make an entry in the diary for an appointment and set a reminder for 10 minutes before the appointment time.

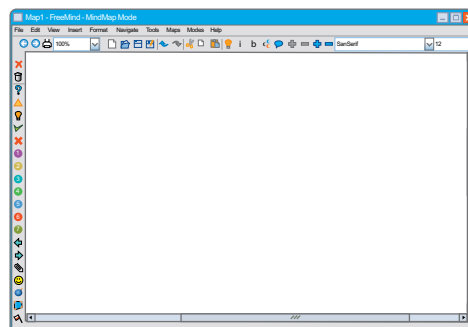
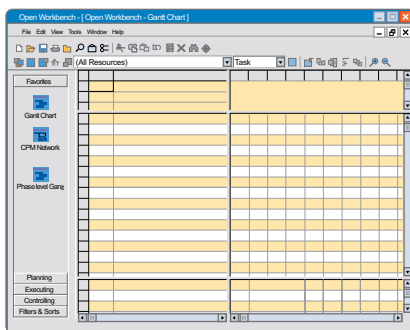
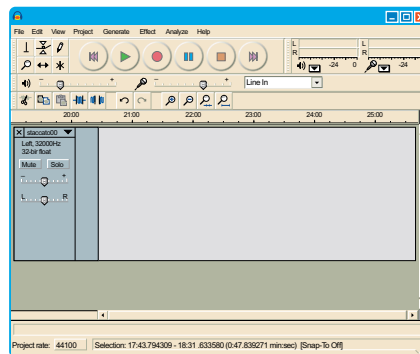
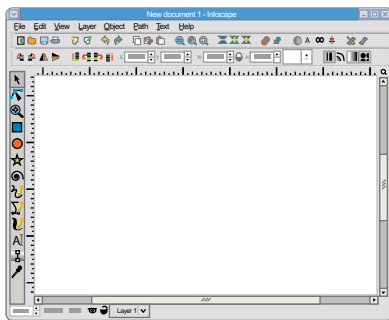
If possible, change the computer clock to one minute before the reminder date/time and wait for the reminder. Then, if necessary, use the Help file to find out how to clear the reminder.

Don't forget to reset the clock to the correct time.

- F2** Choose one of these tasks to do on your own:

- make a drawing of a street scene
- make an audio recording of someone reading a poem or singing a song
- make a project plan for producing and staging a play
- make a mind map for marketing and selling a product – either imaginary or real

Try to choose a task for which you will need to use a type of application that you are *not* familiar with (drawing, audio recorder, project planning, mind mapping).



G Work with files and folders

Learn the skill

Files

A file is a block of information held on a drive (hard disk, CD/DVD, USB memory stick). Each file is identified by a name. Almost all information on a computer is held in the form of files.


A file is made when you create information (i.e. text or a graphic) in an application, give the information a name and save it to a drive.



File name extension


A file name has two parts. The first part is chosen by the user, to identify the file. The second part – the file extension – is added to the name automatically by whatever application is used to create the file.



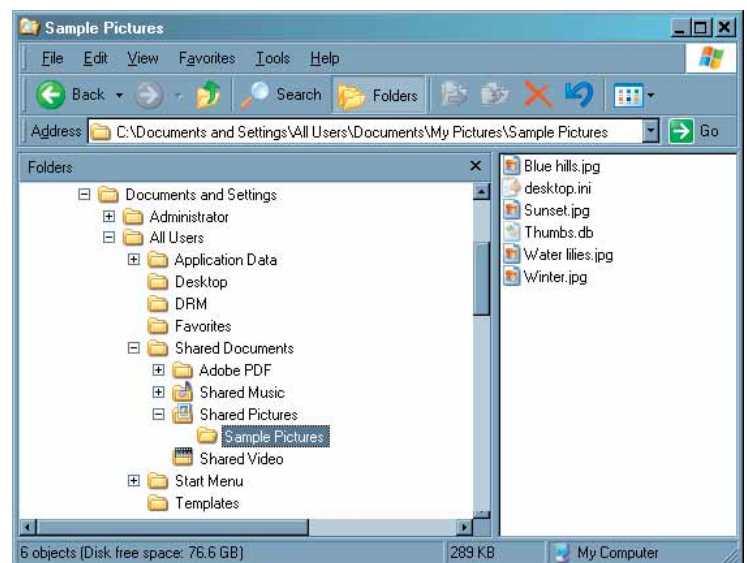
 The file extension (usually three characters long) tells you the type of file (a word-processed file in this case).

Folders

 You can **create folders** to organise and group files under common headings.

 This picture shows a set of folders. You can **move around** within this structure. The top folder is called *Documents and Settings*. This contains other folders, including one named *All Users*. This contains other folders in a chain which ends with a folder named *Sample Pictures*. This folder is open. All the files it contains are listed in the right-hand side of the picture.

The full name of the *Sample Pictures* folder, known as its **path**, is *C:\Documents and Settings\All Users\Shared Documents\Shared Pictures\Sample Pictures*.



What should you call your files and folders?

As well as organising your folders in a logical way, you need to know what is in them. When you **save a file**, use abbreviations to keep names short, but make sure they make sense.

Develop the skill

G1 Imagine you are setting up a new PC at home. Using a pencil and paper, draw out a folder structure for storing work on the new PC. First, create a folder for each person who will use the PC. Then add the subfolders that you think each person might find useful.

G2 The table shows a list of folders on a PC. The list of contents is not in the correct order. Cut and paste the correct content to each folder.

Folder name	Content of folder
CustServ	Accident book for each department and first aid manuals
XmasParty	Activities for a school induction week

G3 Open your files and folder viewer application and go to your personal storage area. Make a new folder named *Tasks*, then practise **copying**, **moving** and **deleting** this folder.

Hint in Windows Explorer use the File/New menu.

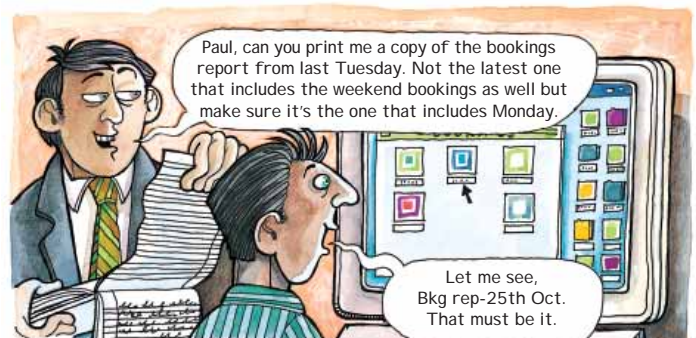
G4 Open a text editor or a word processor. Make a new file and enter a few words. Use the File/Save menu to save the file with a name of your choice into the new *Tasks* folder. Close the file and close the application.

G5 Use your file viewer to go to the new file you have just made. **Change the name** of this file. Should you change the file extension as well as the name?

G6 Use each of these ways to open the renamed file:

- Double-click on the file name in the file viewer.
- Right-click on the file name in the file viewer to open a context menu. Select the Open or Open With menu option.
- Change the file name extension to jpg. Now try opening the file again using the same methods. Can you explain what happens?

G7 What happens if you try to give exactly the same name, including the file extension, to two files in the same folder? What happens if one file has its name in upper-case letters and the other has exactly the same name, but in lower-case letters? Is it possible to give two files in different folders exactly the same name?



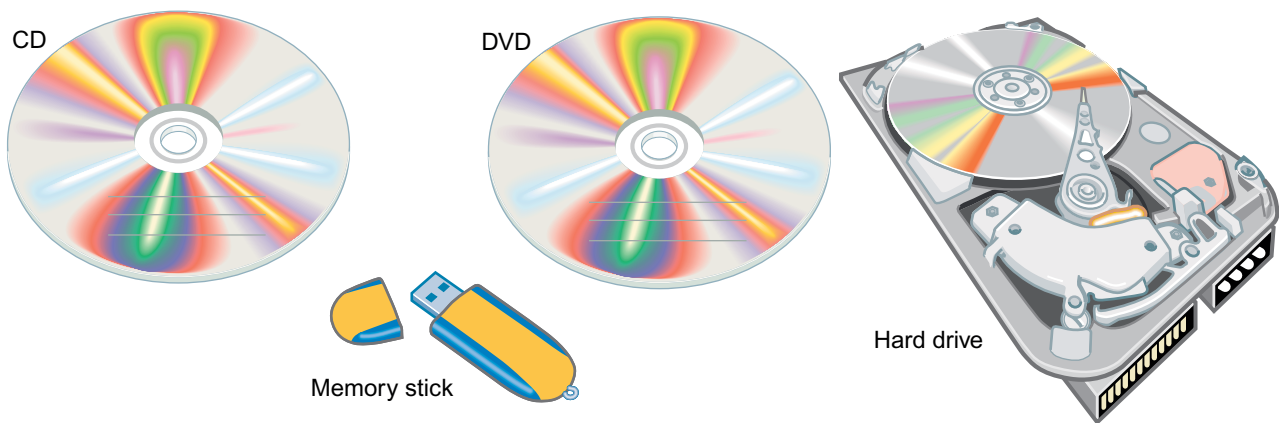
H Insert, remove, label and store media safely

Learn the skill

What is portable storage media?

Computer files can be stored separately from a computer on **portable storage media**. The most common are optical disks (CD-R, DVD), USB flash drives and external magnetic hard disks.

CD-Rs and DVDs are *read-only*, which means that once files have been written (burned) to the disk they cannot be changed. Flash drives and hard disks are *read-write*, which means files can be opened, edited and saved on the drive or disc.



Handling and labelling portable media

Optical disks (CD-Rs and DVDs), being read-only, are usually labelled to identify what is on them. USB read-write devices, which can have their content changed, are usually not labelled.

Optical disks can be labelled in three ways:

- by printing – the disk must have a suitable printable surface
- by attaching a sticky label
- by marking with a suitable pen

Some ink-jet printers are able to print directly to the surface of printable CDs or DVDs. Or you can print sheets of circular sticky labels that are peeled off and stuck to the disk. Water-based CD marker pens should be used only on the non-readable side of the disk. Do not use an ordinary felt tip or any solvent-based pen, as they may damage the disk and make it unreadable.



Develop the skill

H1 Get some blank, unlabelled CD-Rs or DVDs. Make sure you can tell the difference between the readable side of the disk (usually the more shiny side) and the label side.

H2 Use a CD-R containing files. Load it into a CD drive on a computer and list the folders and files on the disk using the system file viewer.

What letter does the machine give to the CD drive? Does the CD have a volume label? If so, this will appear next to the drive letter. What is a volume label?

What happens if the disk is loaded into the drive the wrong way up?

H3 Find out the best ways of handling and storing optical disks.

H4 What is the main difference between CD-R and CD-RW optical disks?

H5 Find out why floppy disks are now much less popular as a portable storage medium. What has replaced them?



Hint try the website
<http://www.osta.org>.

