

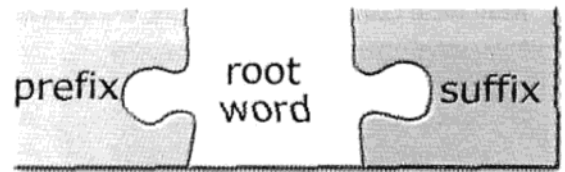
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33 Prefixes

A

Common prefixes

We can form new words by using prefixes and suffixes, e.g. **micro-process-or**
prefix + root + suffix.



Word parts are like puzzle pieces

Prefixes come before the root word and usually change its meaning. Here are some common ones in ICT.

■ Negative prefixes meaning 'not':

non- **Non-volatile** memory retains its content when the power is turned off.

un- An **unformatted** disk has not been 'initialized'; it doesn't allow data to be stored.

■ Prefixes of location:

trans- (= across) Data **transmission** can be wired or wireless.

inter- (= between) The Internet consists of millions of computers **interconnected** in a global network.

intra- (= within) An **intranet** is a private network, restricted to a company's internal use.

extra- (= outside, in addition to) An **extranet** links a company with its customers and suppliers.

tele- (= over a distance) **Teleconferencing** enables users in different places to talk to and see each other.

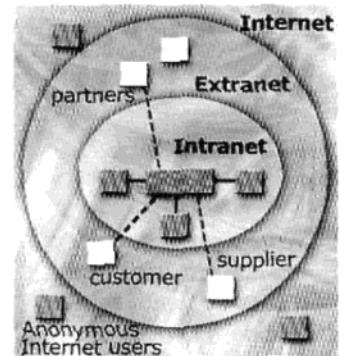
■ Prefixes of size:

super- (= large, better) A **supersite** offers links to other websites on a certain topic.

semi- (= half, partly) A **semiconductor** is neither a good conductor nor a good insulator (e.g. **silicon**, used to make computer chips).

micro- (= small) A **microbrowser** is designed to display web pages on PDAs and mobiles. Prefixes of size are also used in units of memory like **megabyte** and **gigabyte**.

■ Another common prefix is **re-** in words like **reprint**, **rewritable** and **reboot**, to start the computer again.



An extranet is like an extended intranet

B

Verb prefixes

Prefixes used to form verbs which mean 'to cause to be something':

en- **encrypt**: to change data into a secret code so that only someone with a key can read it

up- **update**: to modify data in a file and thus ensure the file reflects the latest situation

upgrade: to add or replace hardware or software in order to expand the computer's power

upload: to send files to a central, often remote computer; compare with 'download'

Prefixes that mean 'the opposite of an action' or 'to reverse an action':

de- **decrypt**: to convert secretly coded (encrypted) data back into its original form

decompress: to restore compressed data back to its original size

debug: to correct errors in a program or system

defragment: to reorganize data stored on disk by putting files into contiguous order

un- **uninstall**: to remove hardware or software from a computer system

C

The prefixes **e-** and **cyber-**

The **e-** prefix means 'electronic'; **cyber-** describes things relating to computer networks.

e- The term **e-learning** refers to the use of ICT to provide education and training.

An **e-zine** is a magazine or newsletter published online.

E-commerce is the buying and selling of products or services over the Internet.

cyber- The electronic space in which online communication takes place is called **cyberspace**.

Cyberslacking means using a company's Internet access for activities which are not work-related, e.g. emailing friends, playing games, etc.; it is also called 'cyberloafing'.

3.1 Use words from A opposite to complete these sentences.

- 1 Medical researchers in many countries exchange information through email and
- 2 memory (e.g. ROM or flash memory) is able to hold data when switched off.
- 3 Blogs and web portals are examples of ; they offer news, opinions and web links.
- 4 are used for making integrated circuits and computers.
- 5 I'll post the agenda for next week's meeting on the company's
- 6 A home network is two or more computers to form a local area network.

3.2 Complete these definitions with words from A opposite.

- 1 : a disk that is completely blank, so information can't be recorded onto it
- 2 : a network that allows communication between a company and the people it deals with
- 3 : the process of sending data over a communication channel
- 4 : to restart the computer, without switching it off completely
- 5 : a web browser designed for small screens on hand-held devices

3.3 Complete these sentences with words from B opposite and make any necessary changes.

- 1 The program ran so slowly, I had to un..... it.
- 2 Your financial information is fully en..... and cannot be accessed.
- 3 Messages encrypted using a public key can only be de..... by someone with the corresponding private key.
- 4 The computer compresses and de..... a colour image in less than a second.
- 5 Once you've written a program, you have to test it and de..... it to remove all the errors.
- 6 In cyberspace, 'up.....' means to send a file.
- 7 You can easily up..... your files by adding or deleting information.
- 8 To de..... your hard disk you need a disk optimizer, a program that will reorder your files.
- 9 There are minimum system requirements for your PC to be suitable for to Windows Vista.

3.4 Complete this text with words from C opposite.

The term 'cyber' first appeared in the word 'cybernetics', coined by Norbert Wiener in 1948 as the science of communication and control. In the 1960s new 'cyber' words emerged, such as *cybermen* and *cyborg*, referring to a being that is part robot, part human. In 1984 William Gibson popularized the term (1) in his novel *Neuromancer*. He used it to describe a futuristic, virtual world of computers, but now it refers to the Internet. Other common words are *cyberworld*, *cybercafé*, and *cyberphobia* (a fear of computers). Companies are now worried about (2) : employees using the Net to do things that have nothing to do with their jobs, e.g. chat with friends.

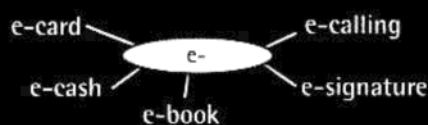
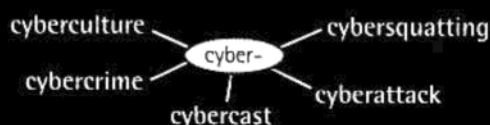
The e- prefix is often added to activities that have moved from the physical world to the electronic alternative, e.g. *email* and *e-shopping*. Other well-known examples are: (3), small magazines that are available on the Internet; (4), doing business electronically on the Net; and (5), providing instruction via optical discs, the Web or satellite TV.



A cybercafé

You and computers

With the help of an online computer dictionary, find the meaning of these words.



34 Suffixes

A Common suffixes

Suffixes change the class of the root word. For example, by adding the suffix **-er**, the verb *publish* becomes the noun *publisher*. Suffixes can tell you if a word is a noun, adjective, verb or adverb.

Suffixes for jobs:

-er	<i>manufacturer</i> <i>webmaster</i>	The two major manufacturers of processor chips are Intel and AMD.
-eer	<i>engineer</i> <i>auctioneer</i>	Greg is a software engineer , which means he writes computer programs.
-or	<i>animator</i> <i>operator</i>	He worked as a computer animator on <i>Toy Story</i> .
-ant	<i>IT consultant</i> <i>IT assistant</i>	She's a computer consultant and specializes in e-commerce, data protection and IT strategies.
-ian	<i>technician</i> <i>electrician</i>	A computer technician installs, troubleshoots and upgrades hardware and software.
-ist	<i>typist</i> <i>scientist</i>	Anyone who works as a typist may develop a problem with their hands.

Other common suffixes in ICT:

Nouns	-ion, -ment, -ics, -ity (activity, state)	compression, management, robotics, electricity
Adjectives	-able, -ible (able to be) -ful (full of), -less (without)	programmable (keyboard), convertible (format) colourful, colourless (picture)
Verbs	-ize, -ise (to make)	synthesize (music – to make it with a synthesizer)

B Word families

It is useful to know how to build up word families by adding suffixes. Look at these examples:

Nouns	Verbs	Adjectives	Adverbs
magnet, magnetism	magnetize	magnetic, magnetized	magnetically
recorder, recording	record	recordable, recorded	
digitizer, digitizing	digitize	digital, digitized	digitally

Adding a suffix may change the pronunciation. Look at how the stress changes in these words:

photograph photographer photographic photographically

C We love 'wares'

The suffix **-ware** refers to products of the same type. In computing, *software* refers to programs executed by a computer, as opposed to the physical devices on which they run – the *hardware*. It is commonly used to form jargon terms for classes of software.

- **freeware**: available free of charge, but protected by copyright; it differs from 'free software', which can be changed and distributed subject to licence
- **shareware**: distributed similarly to freeware, except that it requires payment after a trial period
- **malware**: designed to infiltrate or damage a computer (e.g. viruses, trojan horses, spyware)
- **spyware**: designed to monitor the actions of your computer and send this data via the Net
- **adware**: devised to display advertisements; some includes spyware
- **groupware**: enables a group of people connected to a network to work on the same project



Be careful of spyware!

1.1 Which IT professionals from A opposite are described here?

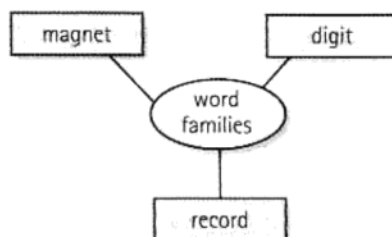
- 1 a person who designs and maintains software applications
- 2 a person who gives expert, professional advice
- 3 a person who uses graphics software to make or edit animated pictures
- 4 a person who is employed to type letters, reports and other documents
- 5 a person or enterprise that produces goods in large numbers, using machines
- 6 a specialist in the technical details of computers

1.2 Complete each sentence using the word in brackets and the correct suffix from A opposite.

- 1 IBM's BlueGene is the most supercomputer. (POWER)
- 2 Most library databases are via the Internet. (ACCESS)
- 3 I'll email my report to you as an (ATTACH)
- 4 This book will show you how to your small business. (COMPUTER)
- 5 An optical disc allows data to be deleted and new data to be recorded on it. (ERASE)
- 6 The growth of the Internet has increased the need for effective data (SECURE)
- 7 The combination of and new textile materials has made it possible to create musical jackets and smart shirts that can read our heart rate. (ELECTRON)
- 8 Bluetooth is a technology designed to connect computers, mobile phones and other devices, replacing direct cable links. (WIRE)
- 9 Aircraft flight is used to train pilots. (SIMULATE)

1.3 Look at the word families in B opposite and complete these sentences with the correct word.

- 1 From kitchen magnets to computer disks, plays a central role in the technology of everyday life.
- 2 Hard disks are storage devices.



- 3 My digital voice has a storage capacity of 2 GB.
- 4 Blu-Ray Disc is a new optical disc format developed by nine electronic manufacturers.

- 5 A video is used to convert analogue video into digital video files.
- 6 Sound and pictures can be stored , as on a CD.

1.4 Look at C opposite. What type of software do these descriptions refer to?

- 1 software that transmits data about your Web surfing habits without your consent
- 2 also known as 'try before you buy' software
- 3 short for malicious software
- 4 software that periodically pops up advertising material
- 5 collaborative software
- 6 programs that you don't have to pay for

You and computers

Access the Professional English in Use ICT website at www.cambridge.org/elt/ict. Then do the activity *More 'wares'*.



"Do you still refuse to run pirated software?"