ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ
ΙΝΣΤΙΤΟΥΤΟ ΕΚΠΑΙΔΕΥΤΙΚΗΣ ΠΟΛΙΤΙΚΗΣ

ΑΓΓΛΙΚΑ

ΤΟΜΕΑΣ ΠΛΗΡΟΦΟΡΙΚΗΣ

Β΄ ΕΠΑ.Λ.

ΙΝΣΤΙΤΟΥΤΟ ΤΕΧΝΟΛΟΓΙΑΣ ΥΠΟΛΟΓΙΣΤΩΝ ΚΑΙ ΕΚΔΟΣΕΩΝ «ΔΙΟΦΑΝΤΟΣ»

ΦΑΚΕΛΟΣ ΥΛΙΚΟΥ

ΑΓΓΛΙΚΑ

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ΙΝΣΤΙΤΟΥΤΟ ΕΚΠΑΙΔΕΥΤΙΚΗΣ ΠΟΛΙΤΙΚΗΣ

Γεράσιμος Κουζέλης, Πρόεδρος του Ινστιτούτου Εκπαιδευτικής Πολιτικής

Δράση για την εκπόνηση Προγραμμάτων Σπουδών και συμπληρωματικού εκπαιδευτικού υλικού για το γνωστικό αντικείμενο των Αγγλικών Γενικού Λυκείου και ΕΠΑ.Λ. βάσει των υπ' αριθ. 10/01-03-2018 και 12/15-03-2018 Πράξης του Δ.Σ. του Ι.Ε.Π. (αρ. πρωτ. 3379/20-03-2018 και ΑΔΑ: ΩΖΞΕΟΞΛΔ-ΓΡΥ).

Το παρόν εκπονήθηκε αμισθί, με ευθύνη της Υπομονάδας Ξένων Γλωσσών του Ι.Ε.Π., στο πλαίσιο της ανωτέρω δράσης.

ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ
ΙΝΣΤΙΤΟΥΤΟ ΕΚΠΑΙΔΕΥΤΙΚΗΣ ΠΟΛΙΤΙΚΗΣ

ΦΑΚΕΛΟΣ ΥΛΙΚΟΥ

ΑΓΓΛΙΚΑ

Β΄ ΕΠΑ.Λ.

ΤΟΜΕΑΣ ΠΛΗΡΟΦΟΡΙΚΗΣ

ΙΝΣΤΙΤΟΥΤΟ ΤΕΧΝΟΛΟΓΙΑΣ ΥΠΟΛΟΓΙΣΤΩΝ ΚΑΙ ΕΚΔΟΣΕΩΝ «ΔΙΟΦΑΝΤΟΣ»

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από τους ιστότοπους
https://pixabay.com και
https://commons.wikimedia.org.
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εικόνες από άλλες πηγές
γίνεται σχετική αναφορά.
Ημερομηνία τελευταίας ανάκτησης
όλων των κειμένων από το διαδίκτυο: 04.09.2018

Εισαγωγικό σημείωμα

Το παρόν διδακτικό υλικό προτείνεται για τη διδασκαλία της αγγλικής γλώσσας στο ΕΠΑ.Λ., προκειμένου να προσφέρει στους μαθητές και τις μαθήτριες ευκαιρίες να αξιοποιήσουν τις ήδη υπάρχουσες γλωσσικές επικοινωνιακές τους ικανότητες και να εμπλακούν ενεργά σε δραστηριότητες που έχουν ως απώτερο στόχο την περαιτέρω γλωσσική, κοινωνική και ψυχοσυναισθηματική τους ανάπτυξη. Ειδικότερα, στοχεύει στην ανάπτυξη γλωσσικών δεξιοτήτων σε επικοινωνιακές περιστάσεις που αφορούν τον επαγγελματικό τομέα της επιλογής τους.

Το υλικό είναι χωρισμένο σε θεματικές ενότητες, σχετικές με τον τομέα Πληροφορικής. Κάθε ενότητα περιλαμβάνει δραστηριότητες κατανόησης και παραγωγής προφορικού και γραπτού λόγου στην ξένη γλώσσα, οι οποίες στοχεύουν στην καλλιέργεια των γλωσσικών επικοινωνιακών δεξιοτήτων τους μέσα από αυθεντικά κείμενα και αυθεντικές επικοινωνιακές περιστάσεις. Οι μαθητές και οι μαθήτριες καλούνται να διαβάσουν, να γράψουν, να συνομιλήσουν, να κατανοήσουν, να παρατηρήσουν, να αναζητήσουν, να παρουσιάσουν και να επεξεργαστούν πληροφορίες κριτικά και δημιουργικά, ατομικά ή και ομαδικά.

Μέσα από βιωματικές και ομαδο-συνεργατικές δραστηριότητες, οι μαθητές και μαθήτριες αναμένεται να κατακτήσουν προοδευτικά το λεξιλόγιο και την ορολογία του επαγγελματικού τομέα που έχουν επιλέξει, και κυρίως να καταστούν ικανοί/-ές να κατανοούν κείμενα αλλά και να παράγουν γραπτό και προφορικό λόγο σε σχέση με το αντικείμενο της ειδικότητάς τους.

Η χρήση αυθεντικών κειμένων αποτελεί αναμφίβολα ιδιαίτερα αποτελεσματική μέθοδο στη διδασκαλία της ξένης γλώσσας, και ιδιαίτερα στη διδασκαλία της για ειδικούς σκοπούς (ESP). Τα εν λόγω κείμενα δεν έχουν σε γενικές γραμμές υποστεί επεξεργασία για την προσαρμογή τους σε συγκεκριμένα επίπεδα γλωσσομάθειας, στοιχείο που αποτελεί το βασικό τους πλεονέκτημα καθώς ενισχύει το βαθμό της πρόκλησης αλλά και τα κίνητρα των μαθητών και μαθητριών για την κατανόησή τους. Επιπλέον, παρουσιάζουν επικοινωνιακές περιστάσεις στις οποίες πρόκειται να εκτεθούν μελλοντικά οι μαθητές και οι μαθήτριες προκειμένου να αναζητήσουν πληροφορίες σχετικές με τον επαγγελματικό τους τομέα.

Σκοπός της χρήσης τους στην τάξη επομένως **δεν είναι η προσαρμογή των κειμένων στο επίπεδο των μαθητών και μαθητριών**. Αντίθετα, κλειδί της επεξεργασίας τους αποτελεί η **προσαρμογή των δραστηριοτήτων** που τα συνοδεύουν ανάλογα με τις ικανότητες και τα ενδιαφέροντα των μαθητών και μαθητριών. Ενδεικτικά προτείνεται, **πριν** από την ανάγνωση του κειμένου, η χρήση κατάλληλα διαμορφωμένων ερωτήσεων, η παρουσίαση του λεξιλογίου που θα χρειαστούν για την κατανόησή του ή και συζήτηση σχετικά με το θέμα του κειμένου στη μητρική τους γλώσσα (pre-reading tasks) κ.λπ., έτσι ώστε να προετοιμαστούν οι μαθητές και οι μαθήτριες κατάλληλα και να μειωθεί ο βαθμός δυσκολίας του κειμένου.

Ο/η εκπαιδευτικός μπορεί να αξιοποιήσει επίσης τεχνικές ανάγνωσης και διαχείρισης άγνωστου/νέου λεξιλογίου για την ανάπτυξη σχετικών μεταγνωστικών στρατηγικών και δεξιοτήτων. Σε κάθε περίπτωση, θα πρέπει να τονίζεται στους μαθητές και τις μαθήτριες ότι το ζητούμενο δεν είναι να κατανοήσουν κάθε λέξη του κειμένου αλλά **να αναπτύξουν τη δεξιότητα και την αυτοπεποίθηση που απαιτούνται, ώστε να χειρίζονται κείμενα με άγνωστες λέξεις και να ανταποκρίνονται με επιτυχία σε μελλοντικές πραγματικές επικοινωνιακές συνθήκες**. Αυτό επιτυγχάνεται αποτελεσματικά μέσα από δραστηριότητες εντοπισμού της γενικής ιδέας ή συγκεκριμένων πληροφοριών σε ένα κείμενο (π.χ. χώρων, αντικειμένων, κατηγοριών), μέσα από τεχνικές "skimming" και "scanning", μέσα από τη χρήση τεχνικών ανακαλυπτικής μάθησης και στρατηγικών όπως SQ3R (Survey, Question, Read, Recite, Review), KWL (What do I know, What do I want to know, What have I learned) ή άλλα είδη γραφικών οργανωτών (mind-maps, spidergrams etc).

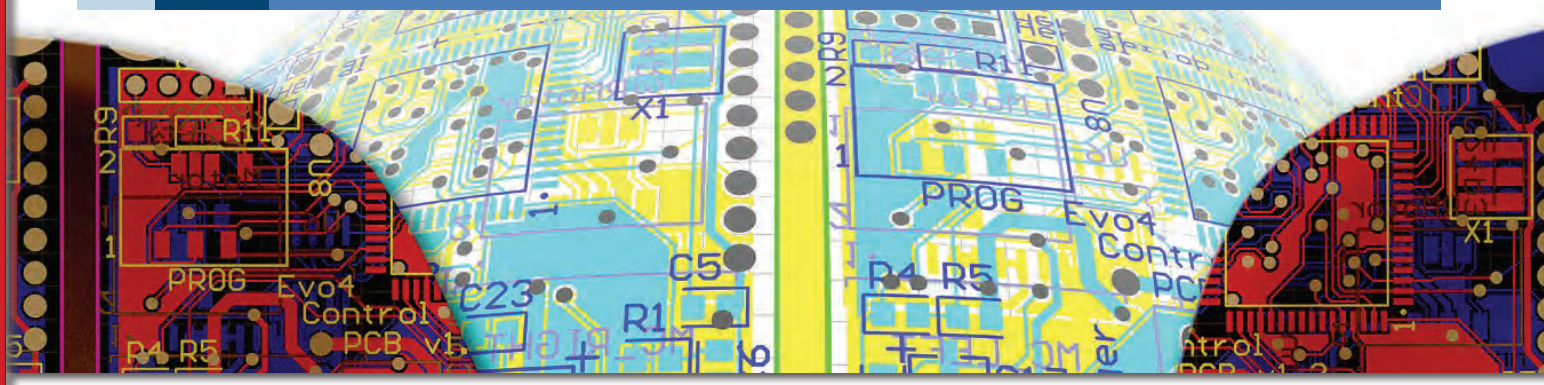
Σε αυτό το πλαίσιο, οι εκπαιδευτικοί έχουν τη δυνατότητα να σχεδιάσουν τη διδασκαλία τους με βάση τις ανάγκες και τα ενδιαφέροντα των μαθητών και μαθητριών τους. Σύμφωνα με τα παραπάνω, προτείνεται οι εκπαιδευτικοί να:

- συμπληρώσουν ή και να προσαρμόσουν το παρόν διδακτικό υλικό σύμφωνα με τις ανάγκες της τάξης τους,
- παράσχουν στους μαθητές και τις μαθήτριες ευκαιρίες ενεργού μάθησης εμπλέκοντάς τους σε διαδικασίες αναστοχασμού, διερεύνησης, προβληματισμού, κριτικής σκέψης, σύνθεσης, αλληλεπίδρασης, αξιολόγησης, λήψης απόφασης κ.λπ.,
- στοχεύουν στον εμπλουτισμό των προσωπικών εμπειριών των μαθητών και μαθητριών, συνδέοντας τη σχολική τάξη με τον κόσμο του μελλοντικού τους επαγγέλματος.

1

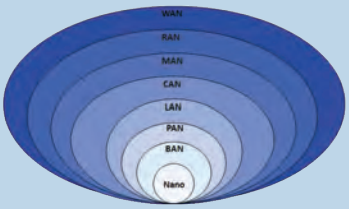
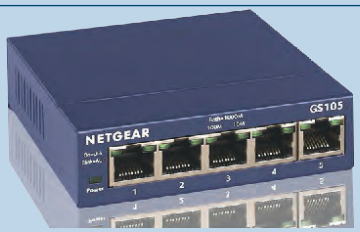
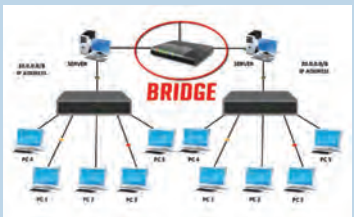
Network Devices and Equipment

1 Network Devices and Equipment



1. Do you know the answers to the following questions? Work in groups and try to answer as many as you can (you may use Greek language too). Then, read the text and come back to check or complement your answers.

1.		What do ***network devices*** do? What are they used for? ....
2.		What does ***network equipment*** include? Name specific devices. ....
3.		What is the difference between ***wired*** and ***wireless*** networks? ....
4.		Why are ***protocols*** regarded to be fundamental mechanisms for network communications? What do they do? ....

5.		What are the main kinds of ***area*** networks? ....
6.		What is a network ***hub*** used for? What are its drawbacks? ....
7.		What is a network ***switch*** used for? What is its advantage in comparison with a network hub? ....
8.		What does a ***modem*** do? ....
9.		What does a ***router*** do? ....
10.		What does a ***bridge*** do? ....
11.		What does a ***repeater*** do? ....

1 Network Devices and Equipment

2. Read the following text to get the information you need for the previous activity and then do the tasks below.

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Network Devices and Equipment

Network equipment is used to combine, split, switch, boost or direct packets of information along a computer or telecommunications network. This product area includes hubs, switches, routers, bridges, gateways, multiplexers, transceivers and firewalls. In addition to device type, network equipment is defined by protocol (e.g. Ethernet) and port or interface type.

Networking equipment interconnects devices so that data can be shared between them. The layout or topology of these connected devices describes the network's design or structure. Common topologies for computer networks include bus, ring, star, tree and mesh.

In wireless networks, devices communicate via radio waves and do not require physical connections whereas in wired networks, cables are used. These cables are equipped with connectors for a specific port or interface type.

Computer networks handle data according to protocols that are fundamental mechanisms for network communications. Network protocols specify the software attributes of data communications, including the structure of packets and the information contained therein. Depending upon the type of network, packets may be called blocks, cells, frames or segments. Network protocols may also prescribe some or all of the operational characteristics of the network hardware on which they run.

Network equipment may be designed for local area networks (LAN), metropolitan area networks (MAN) or wide area networks (WAN).

If we take a look at the different devices, they work at different layers of the computer networks. These different layers are like different zones of a computer network with specified works, also called 'network protocols'. For example, a LAN cable has got the purpose of connecting a computer to the local area network whereas a Wi-Fi router has got the purpose of sending and receiving data between you and your internet connection.

Types of Network Equipment

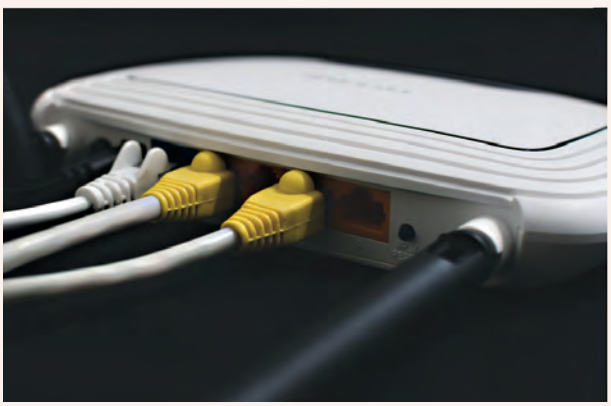
Network Hub

This is a networking device used to connect multiple network hosts as well as to do data transfer. The data is transferred in terms of packets on a computer network. So when a host sends a data packet to a network hub, the hub copies the data packet to all of its ports

connected to. However, because of its working mechanism, a hub is not so secure and safe. Moreover, copying the data packets on all the interfaces or ports makes it slower and more congested, a fact which led to the use of network switch.

Network Switch

Like a hub, a switch also works at the layer of LAN (Local Area Network). While hub just does the work of data forwarding, a switch does 'filter and forwarding' which is a more intelligent way of dealing with the data packets. So, when a packet is received at one of the interfaces of the switch, it filters the packet and sends it only to the interface of the intended receiver. For this purpose, a switch also maintains a CAM (Content Addressable Memory) table and has its own system configuration and memory.



Modem

A modem, which stands for **Mo**dulator + **Dem**odulator, is a hardware device that allows a computer to send and receive data over a telephone line or a cable or satellite connection. In the case of transmission over an analog telephone line, which was once the most popular way to access the internet, the modem converts data between analog and digital formats in real time for two-way network communication. In the case of the high-speed digital modems popular today, the signal is much simpler and doesn't require the analog-to-digital conversion.

Router

A router, which is a protocol-dependent device, is a physical layer networking device that joins multiple networks together. Typically routers are designed to make decisions about which path or interface to use for network traffic. Generally they perform very little filtering or policing, instead they are optimized for speed.

Bridge

They should be used to interconnect local or remote networks in order to centralise network administration. A bridge connects two subnetworks as a part of the same network. You can think of two different labs or two different floors connected by a bridge.

Repeater

A repeater is an electronic device that amplifies the signal it receives. When it receives a signal, it retransmits it at a higher level or higher power so that it can cover longer distances. Repeaters use regeneration and retiming to ensure then that signals are transmitted clearly through all network segments.

http://www.globalspec.com/learnmore/networking_communication_equipment/networking_equipment/networking_equipment

http://fossbytes.com/networking-devices-and-hardware-types/

3. *True* or *False*?

Which of the following sentences is true (*T*) or false (*F*) according to the text?

		True	False
1.	Blocks, cells, frames or segments are all packets of information or data.		
2.	'Network protocols' are layers of a computer network with specified purpose.		
3.	A hub just connects network hosts without being able to transfer data.		
4.	A switch maintains a Content Addressable Memory table and has its own system configuration and memory in order to be able to send packets to the intended receiver only.		
5.	Transmission over an analog telephone line is nowadays the most popular way to access the internet.		

4. Read the text carefully and then choose the correct answers.

1. What is the aim of the text?
   a. To list different products for purchase.
   b. To compare the function of different equipment.
   c. To provide knowledge about network devices and equipment.

2. According to the article, why are network devices necessary?
   a. They facilitate the sharing of information and data.
   b. They distribute the layout of various interconnected devices.
   c. They forward information to a wide area network.

3. Why is the network hub not preferable?
   a. Because it provides access to few computer networks.
   b. Because it transfers data to all active ports without filtering.
   c. Because it works at the layer of LAN (Local Area Network).

5. Match the words (*1-10*) with the definitions (*A-J*).

1. _____ Ethernet
2. _____ protocol
3. _____ hub
4. _____ switch
5. _____ interface
6. _____ configuration
7. _____ cable
8. _____ router
9. _____ optimise
10. _____ gateway

A	Hardware device designed to receive, analyse and move incoming packets to another network.
B	A device or programme that enables a user to interact with a computer.
C	Wire(s) inside a protective covering used for transmitting electricity or telecommunication signals.
D	To achieve maximum efficiency / make the most effective use of a situation or resource.
E	The point of access to computers outside your network.
F	Technology for connecting wired local area networks (LANs) enabling devices to communicate with each other via a protocol.
G	A set of technical rules governing the exchange or transmission of data between devices.
H	A basic networking device that connects multiple computers or other network devices together.
I	A hardware device that connects computers in a network, filtering and forwarding data packets.
J	The arrangement of functional units, i.e. the internal and external components, that make up a computer system.

6. Choose the answer (*a*, *b*, or *c*) you find most appropriate.

♦ *protocol*	♦ *interface*	♦ *attribute*	♦ *LAN*
♦ *transceiver*	♦ *analog*	♦ *repeater*	♦ *networking*

1	A user _____ is a point of interaction between a computer and humans.
2	A(n) _____ has networking equipment in close proximity to each other, capable of communicating, sharing resources and information.
3	_____ transmission is a transmission method of conveying information using a continuous signal of varying frequency as opposed to digital transmission.
4	Each _____ has its own rules that dictate how data is formatted, transmitted and received.
5	_____ is an electronic device that receives a signal and retransmits it; it extends transmissions so that the signal can cover longer distances or be received on the other side of an obstruction.

7. Complete each blank in the following pairs of sentences with the correct word.

1.	device / equipment a. The newly-designed _____ will be displayed on this year's annual technology exhibition. b. Thieves broke into the offices last night and stole €15,000's worth of computer _____.
2.	router / hub a. A _____, which connects multiple computers or other network devices together, has no routing tables or intelligence so as to be able to traffic information. b. Within a LAN environment the _____ provides local address resolution services and may segment the network using a subnetwork structure.
3.	configuration / interface a. _____ refers to what kind of hardware is connected, and how those connections are set up. b. In computing, a(n) _____ is a shared boundary across which two or more separate components of a computer system exchange information.

☑ *Word formation. Look at the following table showing how we form nouns from verbs adding a suffix.*

Vocabulary building	forming nouns from verbs	verb + suffix ⇨ noun		
Adding affixes to existing words is a way to form new words. Suffixes usually change the class of the word.	-tion	communicate	⇨	communication
	-sion	admit	⇨	admission
	-ment	equip	⇨	equipment
		develop	⇨	development
	-ence	prefer	⇨	preference
	-ance	maintain	⇨	maintenance
	-ant	assist	⇨	assistant
	-ent	depend	⇨	dependent
	-age	pack	⇨	package
		waste	⇨	wastage
	-er	drive	⇨	driver
		compute	⇨	computer
	-ery / -ory	rob	⇨	robbery
	-ry	bake	⇨	bakery
	-al	arrive	⇨	arrival

8. Complete the sentences using the correct noun from the verbs in parentheses.

1 This _____ (*route*) has been specially designed to improve its overheating _____ (*resist*).

2 The networking equipment needs further _____ (*improve*) before launched in the market.

3 _____ (*convert*) is a term used to describe the ability of _____ (*transfer*) of a file or a segment of data from one format to another format.

4 Staying at a suspicious website in unsafe mode may lead to the loss of personal data and computer _____ (*break*).

5 A _____ (*use*) may setup a _____ (*serve*) to control access to a network, send/receive e-mail, manage _____ (*print*) jobs, or host a website.

6 What is the _____ (*differ*) between a _____ (*direct*) and a _____ (*fold*)?

7 A criminal _____ (*hack*) is any individual who illegally breaks into computer systems to damage or steal _____ (*inform*).

8 A _____ (*direct*), which is found in a hierarchical file system, is a _____ (*locate*) for storing files on your computer.

Modal Verbs

9. The following sentences appear in the text about network devices and equipment. Underline the modal verbs and match them with their functions below.

a. When it receives a signal, it retransmits it at a higher level or higher power so that it can cover longer distances.

b. Depending upon the type of network, packets may be called blocks, cells, frames or segments.

c. They should be used to interconnect local or remote networks in order to centralise network administration.

1 obligation	2 ability	3 possibility	4 permission	5 advice

Modal Verbs

Modal verbs do not have all tense forms.

They are followed by bare infinitive (infinitive without to)

They do not take -s / -ing / -ed suffixes

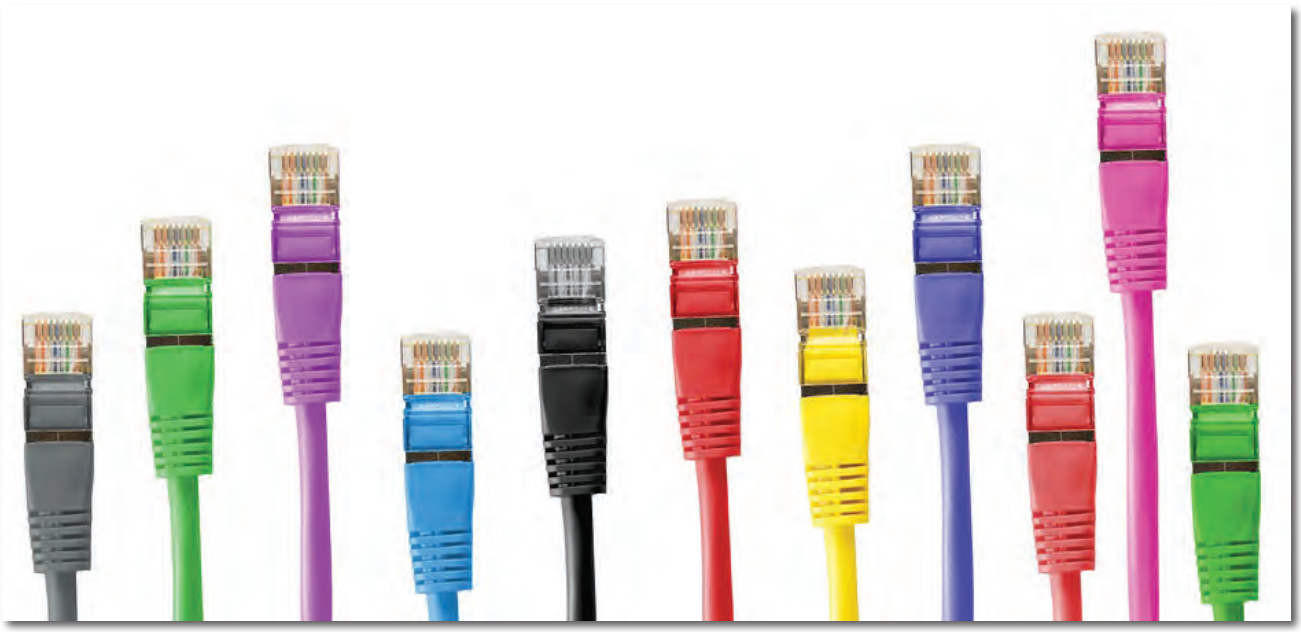
They form the interrogative and negative form without an auxiliary verb.

☑ *In the following table you can see the meanings and different uses of modal verbs.*

Modal verbs	Use
can / be able to could was able to	**ABILITY** ability in the present / future ability in the past ability on a specific occasion
can / may could / might	**POSSIBILITY / PERMISSION** possibility in the present / future possibility on a specific occasion
should / ought + present infinitive should / ought + perfect infinitive	**PROBABILITY** probability in the present / future something was expected to happen but it did not happen
should / ought to	**ADVICE** general / strong advice
must mustn't have to / had to should / ought to	**OBLIGATION / DUTY / NECESSITY** duty / strong obligation prohibition strong necessity / obligation duty / weak obligation
don't have to / don't need to / needn't didn't have to / didn't need to needn't + have + past participle	**ABSENCE OF NECESSITY** it is not necessary in the present / future it was not necessary it was not necessary but it was done
must + present / perfect infinitive can't / couldn't may / might / could	**DEDUCTION / LOGICAL ASSUMPTION** Almost certain that it is / was true almost certain that it is / was impossible possible that it is / was true

10. Complete the sentences in the following router user guide choosing the correct item and providing justifications for your answers.

1	When using this guide, please notice that features of the router **may** / **must** vary slightly depending on the model.
2	This guide aims at allowing you to use your router so that all of your connected devices **will be able to** / **should** take advantage of the service.
3	The product **should not** / **may not** be located where it will be exposed to moisture or excessive heat.
4	Place the router in a location where it **can** / **might** be connected to devices as well as to a power source.
5	In a domestic environment, this product **needn't** / **may** cause radio interference, in which case the user is required to take adequate measures.
6	You **must have** / **should** follow the instructions on the page to continue the configuration.
7	If the router works, you **must** / **may** have followed the right instructions.
8	You **don't need to** / **mustn't** run the setup CD included with the router.



11. Complete the sentences in the following guide with the correct modal verb in the right form.

How to Build and Maintain the Best Home Network

With just a little time and effort, anyone (1)_____ set up a basic home computer network. Simple home networks, though, (2)_____ provide only a small fraction of the capability that an advanced network does. In order to get the most out of your home network you (3)_____ invest in better hardware and additional software. With the movement to cloud computing continuing, families (4)_____ use reliable, fast access to all of their online accounts and data. Most Internet providers nowadays (5)_____ offer a range of service plans at different prices. Subscribing to your provider's basic plans (6)_____ save a few euros each month but you (7)_____ also consider time and convenience. Even small increases in data rates (8)_____ shave valuable minutes off of long download. You (9)_____ upgrade your Internet service plan to the best available and (10)_____ change providers if necessary. Note that the best home Internet service (11)_____ not be provided by the one with the largest Mbps rating. If you still have problems with accessing all points at home, you (12)_____ followed the above instructions. You (13)_____ a computer expert to follow these rules.

12. Match the verbs in bold to their meanings.

_____	1.	You **didn't need** to buy a new router since you didn't wish to upgrade your home network.	a	You are not allowed to...
_____	2.	We **had to** unplug our router due to overheating.	b	It's against the rules...
_____	3.	You **can** get the router IP address from the manufacturer's documentation.	c	We were obliged to...
_____	4.	You **might** as well buy a modem if you have an up-to-date router.	d	Is it OK if...
_____	5.	You **mustn't** reset your router, if there are no problems.	e	It wasn't necessary...
_____	6.	You **can't** use your neighbour's IP address.	f	It's possible...
_____	7.	**Could** I please use your laptop?	g	Perhaps you can...

- *You are going to hear a talk by a Tech enthusiast about technology innovations and the impact on our lives. Then do the following tasks.*

http://www.ted.com/talks/kevin_kelly_on_the_next_5_000_days_of_the_web

13. Choose the most appropriate title for the talk.

a. What is technology about?
b. Predicting the future of the World Wide Web.
c. The impact of technology on our lives.

14. Listen again and complete the missing words in the following sentences.

1	If I told you it was all _____, you would say, this is simply – you're dreaming.
2	One of the things that we're learning from this era, from this last decade, is that we have to get good at believing in the _____.
3	There's almost no other machine that we've ever made that _____ of hours, the number of days.

4	But to a first _____, the size of this machine is the size –and its complexity, kind of– to your brain.
5	Thirdly, we're going to become completely _____ upon it.
6	The cloudbook doesn't have any storage. It's _____. It's always connected.
7	All the cameras, and the microphones, and the _____ in cars and everything is connected to this machine.
8	Every item, every artifact that we make, will have _____ in it some little sliver of Webness and connection.

15. Work in groups to answer the following questions:

a. Name some things mentioned in the talk that were thought impossible 10 years ago. What other things we have today were thought impossible?

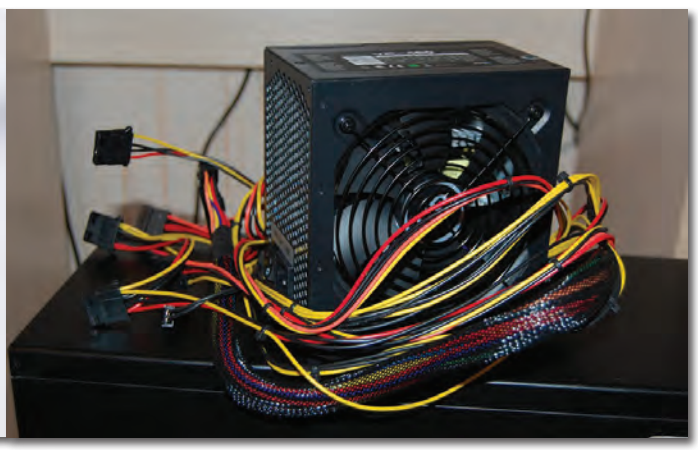
b. Kevin Kelly asks: "How can we predict what's coming in the next 5,000 days?" What do you think is coming?

http://www.ted.com/talks/kevin_kelly_on_the_next_5_000_days_of_the_web#t-98088

16. Brainstorm reasons why you should upgrade your home computer network and decide which devices and equipment to use. Write them down in the following table.

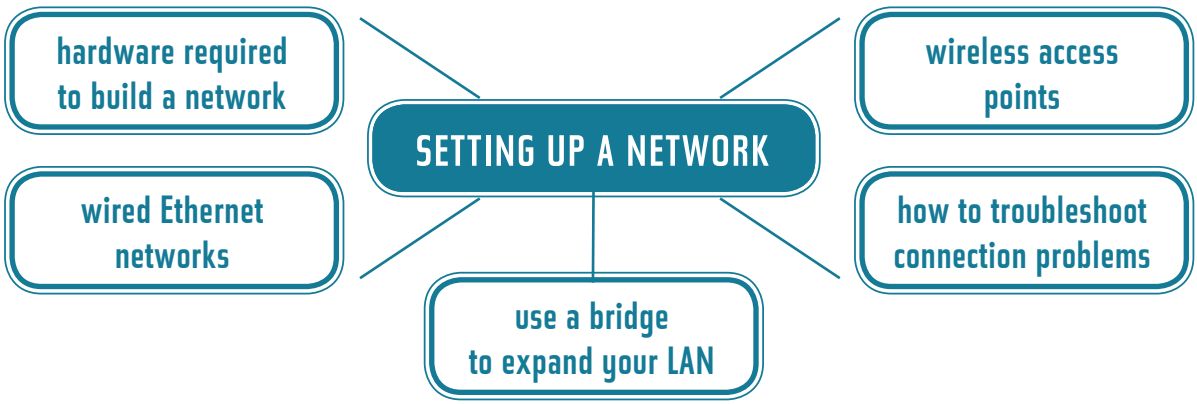
Reasons	Devices
•	•
•	•
•	•
•	•
•	•

17. What are the similarities and differences among routers, switches and hubs? Work in groups to prepare a presentation about the key characteristics of each of the devices.



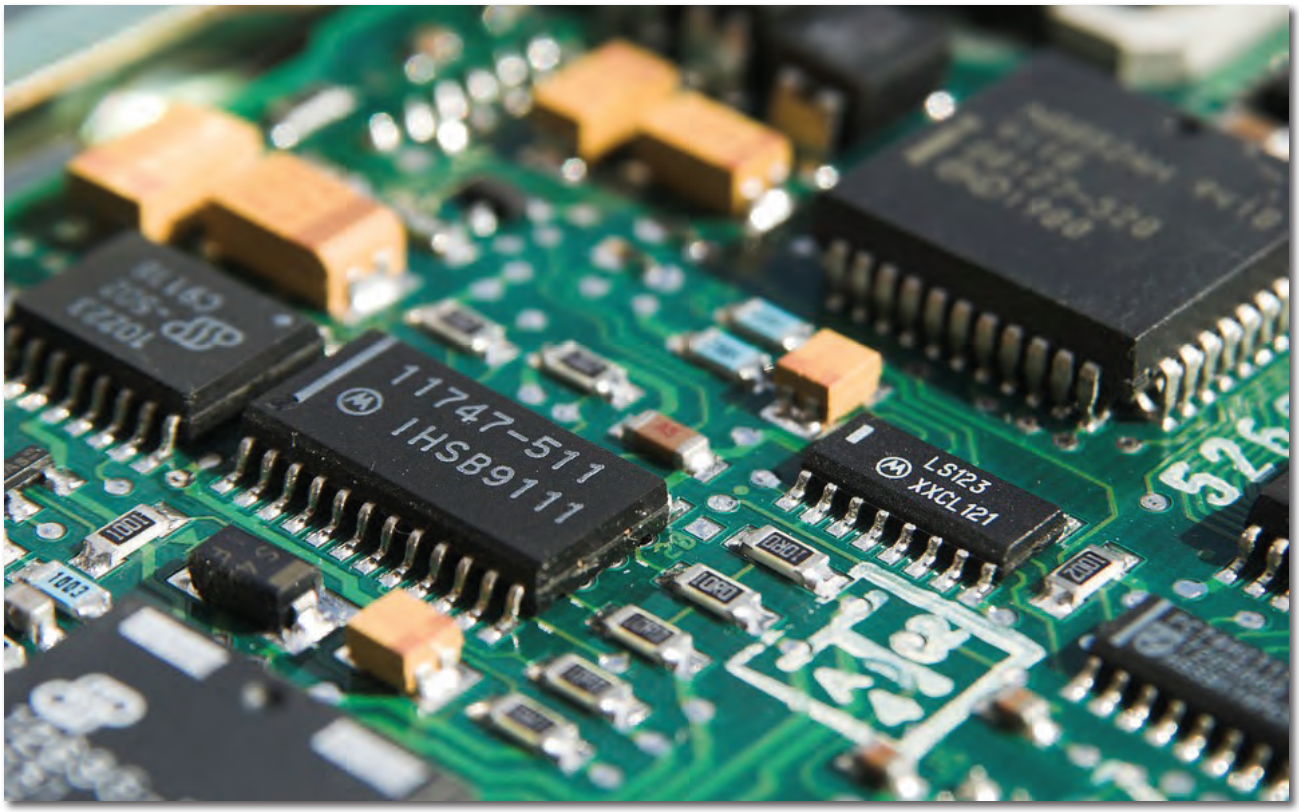
1 Network Devices and Equipment

18. Your school's principal has asked you to improve the school's computer network. Discuss the importance of the following or other needs and decide on the priority of works to be undertaken.



19. a. How do network devices and equipment contribute to interaction and communication?

b. How does a computer network facilitate the operation of a school / office / business?



20. Write instructions, in steps, about how to improve and upgrade the reliability of a home computer network. The instructions will be uploaded in the Tech-how-to website (100-140 words). There are some points below to help you:

Tech How-To Guides & Tutorials

- ✓ Use broadband routers
- ✓ Add Wireless Capability to Home Networks
- ✓ Improve the Performance of a Home Network
- ✓ Expand the Size of a Home Network
- ✓ Add More Features to a Home Network
- ✓ Increase Home Network Security
- ✓ Add any other features you consider necessary

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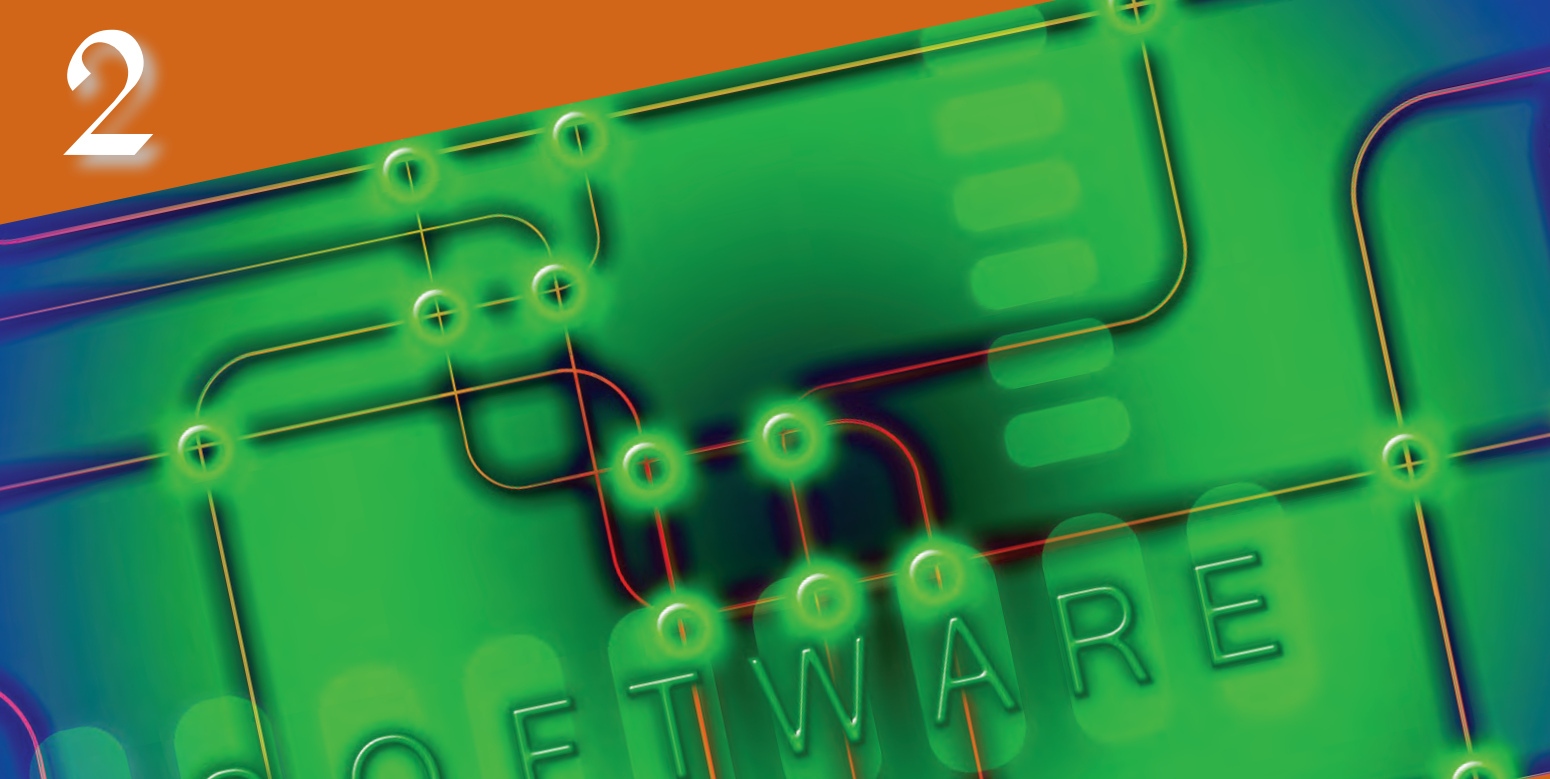
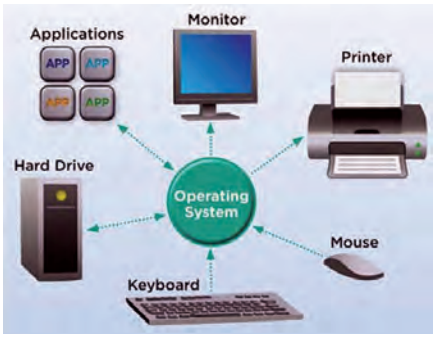
1 Network Devices and Equipment

2



Operating Systems

2 Operating Systems



- ✓ How many operating systems do you know?
- ✓ Which are the most common operating systems nowadays?

1. Read the text and, in pairs, fill in the blanks choosing the correct words from the list below. Some words are written in bold to help you choose.

♦ *hardware* ♦ *input* ♦ *data* ♦ *guest* ♦ *processes*
♦ *operating* ♦ *friendly* ♦ *users* ♦ *consoles*
♦ *intermediary* ♦ *phones* ♦ *networked*

Information Technology Sector

Operating Systems | Objectives | Functions

An operating system (OS) is system software that manages computer hardware and software resources, providing common services for computer programmes.

For hardware functions such as (1) _____ **and output** and memory allocation, the operating system acts as an (2) _____ **between** programmes and the computer (3) _____. The application code, however, is usually executed directly by the hardware and makes system calls to an OS function or is interrupted by it. Operating systems are found on many devices that contain a computer – from **cellular** (4) _____ and video game (5) _____ to web servers and supercomputers.

The objectives of an Operating System are to provide:

1. Convenience: an OS makes a computer more **suitable** to use, so it becomes user (6) _____.

2. Efficiency: an OS allows the computer system resources to be used in a well-organized manner.

3. Ability to evolve: an OS should be constructed in a way that permits effective development, testing and introduction of new functions.

Types of operating systems

Single- and multi-tasking

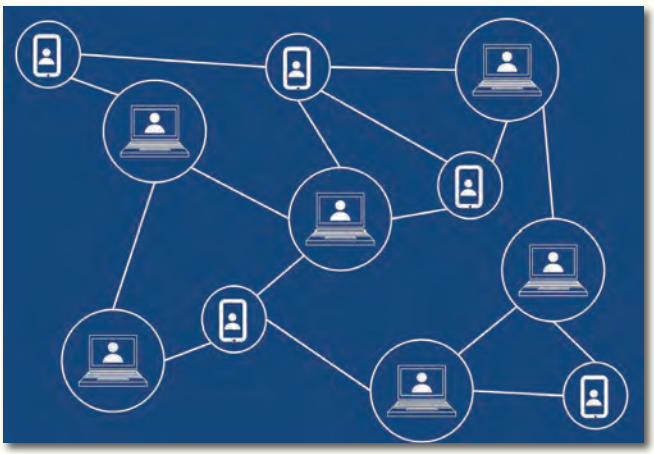
A single-tasking system can only run one programme at a time, while a multi-tasking system allows more than one programmes to be running at the same time. This is achieved by time-sharing, where the available **processor time** is divided between multiple (7) _____.

Single- and multi-user

Single-user operating systems have no facilities to distinguish (8) _____, but may allow multiple programmes to run alongside. A multi-user operating system extends the basic concept of multi-tasking with facilities that identify processes and resources, such as disk space, permits multiple users to interact with the system at the same time.

Distributed

A distributed operating system manages a group of distinct computers and makes them appear to be a single computer. The development of (9) _____ computers that **could be linked and communicate with each other** gave rise to distributed computing. Distributed computations are carried out on more than one machine. When computers in a group work in cooperation, they form a distributed system.



2 Operating Systems

Templated

In a distributed and cloud computing context, templating refers to creating a single **virtual machine image** as a (10) _____ operating system, then saving it as a tool for multiple running virtual machines. The technique is used both in virtualization and cloud computing management, and is common in large server warehouses.

Embedded

Embedded operating systems are designed to be used in embedded computer systems. They are designed to operate on small machines like PDAs with less autonomy. They are able to operate with a limited number of resources. They are very compact and extremely efficient by design.

Real-time

A real-time operating system is a time bound system which has well-defined fixed-time

constraints. It serves real-time applications that **process** (11) _____ data as it comes in, typically without buffer delays. A real-time operating system may be single- or multi-tasking.

Library

In a library (12) _____ **system**, services such as networking are provided in the form of libraries. They are composed with the application and configuration code to construct a uni-kernel: a specialised, single address space (SAS), machine image that can be used in cloud or embedded environments.

http://en.wikipedia.org/wiki/Operating_system

2. *True* or *False*?

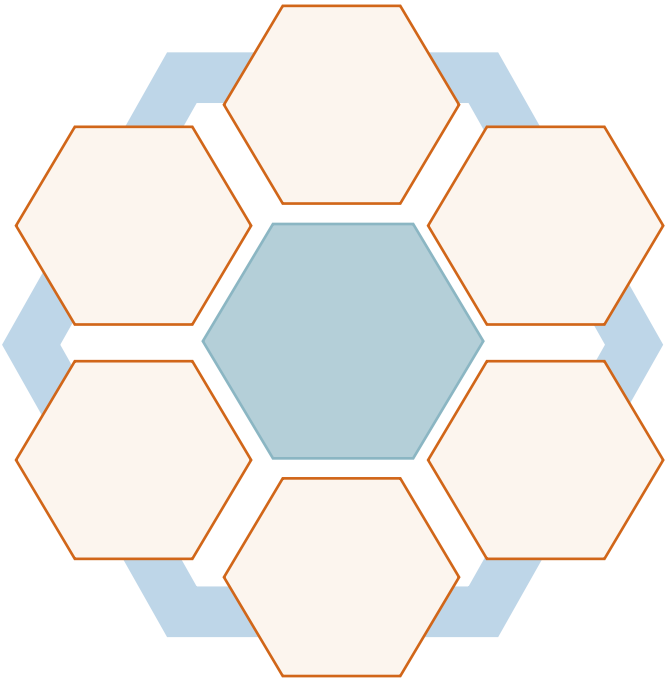
Are the following sentences true *(T)* or false *(F)* according to the text?

		True	False
1.	An operating system is system software for personal computers only.		
2.	Multi-tasking operation is achieved by time-sharing.		
3.	With single-user operating systems you cannot have multiple programmes runnning in parallel.		
4.	If you want a number of computers to work in a network you need to have a distributed operating system.		
5.	Embedded operating systems are compact and efficient but they operate with a limited number of resources.		

3. Read the text carefully and then choose the correct answers.

1.	What does an operating system do? _____
2.	What kind of devices does an operating system need to work? _____
3.	How is multi-tasking operation achieved? _____
4.	What is the difference between multi-tasking and multi-user operating systems? _____
5.	What does a distributed operating system do? _____
6.	What does "templating" mean? _____
7.	What are the characteristics of embedded operating systems? _____
8.	What is the basic characteristic of real-time operating systems? _____
9.	What is a library operating system? _____
10.	What is a uni-kernel? _____

4. Make a list with the kinds, functions and objectives of operating systems using information from the text or from the internet.



Then, in groups, make a poster or use a diagram like the one on the left to present the various operating systems in class.

Kinds	Functions	Objectives
■	■	■
■	■	■
■	■	■
■	■	■

2 Operating Systems

5. Do you know the meaning of the following words?
In pairs, match the words (*1-10*) with the definitions (*A-J*).

1. _____ system resource	6. _____ retrieve
2. _____ booting	7. _____ cloud computing
3. _____ interface	8. _____ vulnerability
4. _____ device driver	9. _____ attack vector
5. _____ directory	10. _____ source code

A	a location/folder for storing files on a computer
B	security weakness in a software programme putting the programme or computer at risk of malicious attacks
C	get stored information from a computer
D	starting up a computer
E	the code used by the programmer to create a software programme
F	technique or means for gaining access to a network server or a computer
G	a programme that enables one or more devices to communicate with the computer's operating system
H	any device/ component connected to a computer system
I	using a network of remote servers to store, manage and process data
J	a connection between two or more components of a computer system exchange (software, hardware, devices, humans).

6. Complete the sentences with the correct word from the following word list. There is one extra option you do not need.

♦ *storage devices* ♦ *boot sector* ♦ *malware* ♦ *vulnerability*
♦ *interface* ♦ *source code* ♦ *corrupting* ♦ *device drivers* ♦ *directories*

1	A new type of computer _____ is to enable blind people to feel and hear 3D graphic environments.
2	A _____ is a physical section on a hard drive that includes information about how to start the boot process in order to load an operating system.
3	_____ scanning tools are computer programmes used to gather information that may be used by an attacker to gain illegal or unauthorized access to a network.
4	In a GUI such as Microsoft Windows, _____ are referred to as folders, therefore being synonymous.
5	Without _____ the computer would not be able to send and receive data correctly to hardware devices, such as a printer.
6	A boot sector exists on an internal hard drive where an operating system is installed, as well on _____, like an external hard drive, floppy disk, or other USB device.
7	The 5 most common _____ types are viruses, worms, Trojan Horses, spyware, and ransomware.
8	Viruses are designed to damage their target computer by _____ data, reformatting your hard disk, or completely shutting down your system

2 Operating Systems

7. Complete each blank in the following pairs of sentences with the correct word.

1. security / vulnerability

   a. An Internet browser could have a _____ that crashes the browser or allows someone to read or copy files on your computer when you visit a web page with malicious code.

   b. Data _____, which does not always guarantee that data cannot be compromised, is a system that protects data from unauthorized access and corruption.

2. encryption / encoding

   a. _____ transforms sensitive data (such as emails, files, folders and entire drives) into another format to make it more secure and less likely to be intercepted by those unauthorized to view it. It is for maintaining data confidentiality and requires the use of a key (kept secret) in order to return to plaintext.

   b. _____ transforms data into another format using a scheme that is publicly available so that it can easily be reversed. It does not require a key. It is for maintaining data usability and integrity and can be reversed by employing the same algorithm used.

3. proprietary / open source

   a. A(n) _____ programme can be freely modified by anyone, allowing users or organizations to adjust the programme's functionality to their needs.

   b. Commercial _____ software is targeted to narrower market of end users and its source code is usually a closely guarded secret.

Comparisons

8. Study the words in bold below. What is the function of each language form?

a. Convenience: an OS makes a computer **more suitable** to use, so it becomes user friendly.

b. Windows is one of **the easiest** desktop operating systems to use.

c. ..... as the operating system with **the largest** user base, ... it is the primary target for malicious coders.

9. Study the following tables about the formation of comparative and superlative and fill in the blanks.

Comparison of Adjectives - Adverbs

	Positive	Comparative -er than more ... than	Superlative the -est in/of the most ... in/of
We use comparative form to compare one person / thing with another.	fast long	fast__ longer	the fastest ___ long___
	nice safe	nicer safer	the nicest the safest
We use superlative form to compare one person / thing with others in the same group.	thin fat	thin__ fatter	the thinnest the fattest
	early happy	earlier happier	___ earl___ the happiest
	realistic comfortable	_____ realistic more comfortable	the most realistic ___ ____ comfortable

2 Operating Systems

	Irregular forms	
positive	comparative	superlative
good / well	_____	the best
bad / badly	worse	the _____
much / many	more	the most
little	less	the _____
far	farther / _____	farthest / _____

Other comparative structures	
as positive **as** **not as** / **so** positive **as** (to show that two persons / things are similar / different in some way)	e. g. Safety rules in the previous decade were **not so/as strict as** the ones in force now.
comparative **and** comparative (to show that something is gradually increasing / decreasing)	e. g. Finding a job seems to be **more and more** difficult nowadays.
the comparative ..., **the** comparative (to show successive comparison)	e. g. **The faster** the machine cycle, **the faster** your computer processes data.
by far the superlative (to emphasise an adjective / adverb)	e. g. This is **by far the greenest** area in our city.

10. Complete the sentences using the correct form of the adjectives/adverbs in brackets. Add any other words necessary.

1	Microsoft Windows was released _____ *(early)* the Linux OS.
2	Linux is one of _____ *(much)* used operating systems in the world.
3	Microsoft Windows is regarded to be as _____ *(reliable)* Linux.
4	When choosing a computer, speed is definitely one _____ *(important)* features.
5	The main aim of developers is to ensure that the user gets _____ *(good)* out of the possibilities of each operating system.
6	When an operating system does not need an antivirus software programme, it is as a result _____ *(economical)*.
7	Windows commands a _____ *(high)* number of desktop users, and therefore it offers a _____ *(large)* selection of commercial software.
8	Some people think that when an operating system is used by _____ *(few)* users, it is _____ *(secure)*.
9	Gamers usually choose operating systems which do not run well on _____ *(old)* hardware.
10	_____ *(high)* the protection it offers, _____ *(expensive)* a secure operating system can be.

11. Complete the sentences choosing the right item.

1	The Mac vs PC debate is one of **the more** / **the most** controversial topics when it comes to computers.
2	Users, who are interested in buying a new computer, always have a dilemma about which brand is **better** / **the best**.
3	Undoubtedly, the operating system he chose is **by far the safest** / **safer** one.
4	While newer versions of this operating system have made significant improvements in security, they are still not as secure **as** / **than** others.
5	**Farther** / **further** measures need to be taken for a **safer** / **safest** internet.

2 Operating Systems

12. Compare the operating systems shown below, using the words in the table.

secure	vulnerable
highly customisable	limited customisation
fast	slow
pricey	free
easy to use	complicated

13. Listen to the dialogue between a man and a woman talking about computer problems, and answer the following questions:

http://www.oxfordonlineenglish.com/computer-problems

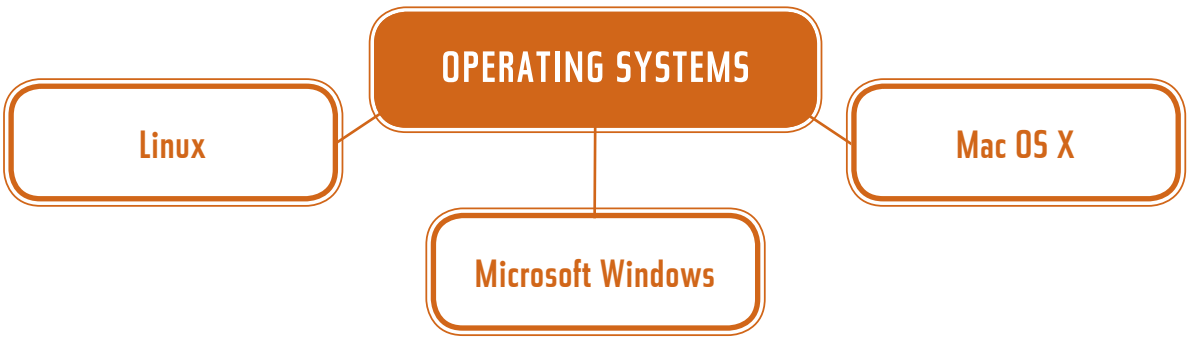
1.	What exactly is the problem with the woman's computer? _____
2.	Does she use the antivirus programme regularly? _____
3.	What did she find annoying? _____
4.	What does the technician intend to do about the problem? _____
5.	How much will it cost to fix the problem? _____
6.	What do you think the expression "that's a good racket" means? Does it have a positive or a negative meaning? _____
7.	How long will the technician take to fix the computer? _____

14. Listen to the dialogue again and complete the missing words in the following sentences

1	What exactly is _____ with it?
2	Do you have antivirus and _____ programmes installed?
3	Warnings kept _____ when I was surfing the Internet.
4	If your computer's been _____ with something, we can try to get rid of it.
5	Others are more difficult - we might have to _____ your hard drive.
6	$200 if we have to reformat and _____ your operating system.
7	Would you like to _____ it _____?
8	No, no, I need it fixed. When can I _____?

FURTHER **PRACTICE**

15. A local organisation is willing to donate money to your school so that you can purchase new computers and upgrade the IT laboratory. Your school's principal has asked for your opinion on the issue. Form groups and discuss about the characteristics of each operating system in terms of reliability, security, ease of use etc commending on their advantages and disadvantages.



16. Imagine that you are employed by a medium-sized business and the business manager has asked you to write a report (140-180 words) about the Operating System in use. Illustrate the major advantages and disadvantages and recommend a different one, if you like.

TECH-NEWS PROJECT REPORT

To: .....

From: .....

Subject: .....

Date: .....

The purpose of this report is to .....

.....

.....

.....

.....

.....

17. a. Why do operating systems have to progress and develop constantly?

b. What are the consequences of this progress?

2 Operating Systems

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