



Ministerio de Educación

Gobierno de Chile

100 TOP

Connectivity and Networking

WORDS TP BOOKLET

3° MEDIO



DEG

División Educación General

English Opens Doors Program

División de Educación General - Mineduc





DEG

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Get to know your booklet

LESSONS



Listening



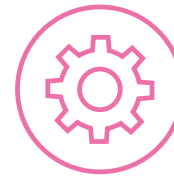
Reading



Speaking



Writing

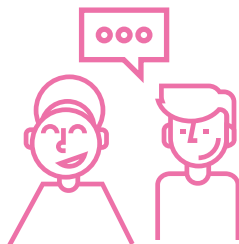


Project

ACTIVITIES



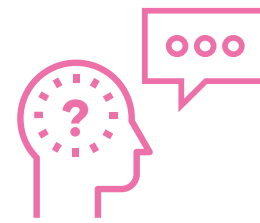
Individual



In pairs



Group Work



Think & discuss

ACTIONS



Read



Write



Watch a video



Speak



Listen



¡Bienvenido!

Welcome!

ES

A continuación, te presentamos un recurso elaborado para avanzar en uno de nuestros principales objetivos: mejorar la calidad y fortalecer la enseñanza Técnico-Profesional en el país.

La creación de este Booklet responde a la importancia de aprender el idioma inglés en el contexto de cada especialidad técnica, de manera que en el futuro puedas acceder a mayores oportunidades de especialización y en el mundo laboral.

Es por esta razón que creamos este recurso didáctico, donde proponemos tanto a docentes como estudiantes, las 100 palabras más utilizadas en cada especialidad aplicadas en contextos específicos, fundamentales para el dominio del idioma.

Dado que en el mundo de hoy es importante entregar todas las opciones para favorecer el aprendizaje del inglés, el trabajo continuo de las actividades que ofrece cada unidad te permitirá desarrollar habilidades lingüísticas como la lectura, audición, expresión escrita y oral, además de trabajar colaborativamente en los proyectos al término de cada unidad.

Esperamos que este 100 Top Words Booklet sea una contribución para el aprendizaje del idioma en la especialidad que has elegido.

EN

We are pleased to present you with this resource, which was created to advance one of our primary objectives- improving and strengthening the quality of technical professional education in Chile.

The creation of this booklet responds to the importance of learning the English language in the specific context of each technical specialty and aims to provide you with access to greater opportunities in your area of concentration, and in the labor market in general.

With that in mind we have created this educational resource, through which we propose to teachers and students alike – the 100 most commonly used words for specific contexts, fundamental to language mastery in each area of technical specialization.

Given the current importance of providing all possible opportunities to foment English language acquisition, the successive completion of the activities offered in each unit will facilitate the development of your linguistic abilities, including reading comprehension, written and oral expression, as well in collaborative learning projects provided at the end of each unit.

We hope that the “100 Top Words” Booklet will contribute to your English language learning, in the technical professional concentration that you have chosen.

Tus comentarios nos importan: [escribenos a TPenglish@mineduc.cl](mailto:TPenglish@mineduc.cl)

Connectivity and Networking Booklet Glossary



A	1. Abroad (adv.), (n.)	(adv.) In or to a foreign country or countries. (n) Foreign countries considered collectively.
	2. ACL (n.)	A network access control list (ACL) is an optional layer of security for your VPC (Virtual Private Cloud) that acts as a firewall for controlling traffic in and out of one or more subnets.
	3. Adapter (n.)	A network adapter is a piece of hardware that acts as the interface for a computer to a network. This way, computers can communicate across a network.
	4. Address (n.)	The place where a piece of information is stored in a computer's memory.
	5. Allocation (n.)	The part of a total amount of something that someone is given to use in a particular way.
B	6. Application (n.)	A computer program that is designed for a particular purpose.
	7. Back up (v.), (n.)	(v.) Make a spare copy of data or a disk. (n.) a copy of information held on a computer that is stored separately from the computer.
	8. Boot (v.)	Start (a computer) and put it into a state of readiness for operation.
	9. Browser (n.)	A computer program with a graphical user interface for displaying and navigating between web pages.
	10. BSI (n.)	The British Standards Institution (BSI), is the national standards body of the United Kingdom.
C	11. Built-in (adj.)	Having the quality of being permanently connected, or not being easily removed.
	12. Cat 5 – Cat 6 cable	Various cables are used for carrying Ethernet: current common types include Cat 5, 5e, Cat 6, 6a, 7, and Cat 8, the RJ45 connector is widely used.
	13. CENELEC (n.)	European Committee for Electrotechnical Standardization. It is responsible for European standardization in the area of electrical engineering.
	14. Chain (n.)	A group of similar businesses, such as restaurants or hotels, which are all owned and controlled by the same organization.
	15. Client (n.)	A customer or entity who receives services.
	16. Coaxial cable (n.)	Coaxial cable is commonly used by cable operators, telephone companies, and internet providers around the world to convey data, video, and voice communications to customers.
	17. Command (n.)	An instruction to a computer to perform a particular action.
	18. Component (n.)	One of the parts of a system, process, or machine.

	19. Connector (n.)	A device that holds a wire in position in a piece of electrical equipment.
	20. CPU (n.)	Central Processing Unit: the part of a computer that controls all the other parts.
D	21. Data (n.)	Information, especially facts or numbers, collected to be examined and considered and used to help decision-making, or information in an electronic form that can be stored and used by a computer.
	22. Degree (n.)	A course of study at a college or university, or the qualification given to a student after he or she has completed his or her studies.
	23. Develop (v.)	To (cause something to) grow or change into a more advanced, larger, or stronger form.
	24. Device (n.)	A machine, for example a phone or computer, that can be used to connect to the internet.
	25. Domain (n.)	A set of websites on the internet that end with the same letters, for example .com
E	26. Employee (n.)	Someone who is paid to work for someone else.
	27. Environment (n.)	The conditions that you live or work in and the way that they influence how you feel or how effectively you can work.
	28. Ethernet (n.)	A system for connecting computers into networks.
	29. Execute (v.)	To do or perform an action in a planned way.
	30. Expansion slots (n.)	A place in a computer circuit where an expansion card can be added.
F	31. Fan (n.)	An electric device with blades that turn quickly, used to move the air around.
	32. Fiber Optic (n.)	The technology used to transmit information as pulses of light through strands of fiber made of glass or plastic over long distances.
	33. File (n.)	Information stored on a computer as one unit with one name.
H	34. Hard disk drive (n.)	Electro-mechanical data storage device that stores and retrieves digital data using magnetic storage and one or more rigid rapidly rotating platters coated with magnetic material.
	35. Host (n.)	The main computer in a network which controls the programs and files.
	36. Hub (n.)	A machine that connects several computers together.
I	37. I/O (n.)	Input / Output
	38. IP (n.)	Abbreviation for Internet Protocol Address: a number that is given to each computer when it is connected to the internet.
	39. ISO (n.)	International Organization for Standardization. They develop and publish International Standards.

	40. Issue (n.)	A subject or problem that requires action.
(K)	41. Kernel (n.)	A computer program at the core of a computer's operating system that has complete control over everything in the system.
	42. LAN (n.)	Local Area Network.
(L)	43. Laptop (n.)	A computer that is small enough to be carried around easily and is flat when closed.
	44. Lead (v.)	The act of modelling how to do something for a person or group of people.
(M)	45. Mail (n.)	A system for sending letters and packages from place to place.
	46. Malware (n.)	Computer software that is designed to damage the way a computer works.
	47. Management (n.)	The process or act of controlling and organizing people or things.
	48. Mesh (n.)	A piece of material like a net with spaces in it, made from wire, plastic, or thread.
	49. Motherboard (n.)	The main printed circuit board that contains the CPU of a computer and makes it possible for the other parts of a computer to communicate with each other.
(N)	50. NAT (n.)	Network Address Translation (NAT) is the process where a network device, usually a firewall, assigns a public address to a computer (or group of computers) inside a private network.
	51. Network equipment (n.)	Networking hardware, also known as network equipment or computer networking devices, are electronic devices which are required for communication and interaction between devices on a computer network.
	52. Network Layer (n.)	The "network layer" is the part of the Internet communications process where these connections occur, by sending packets of data back and forth between different networks.
	53. Network media (n.)	Network media refers to the communication channels used to interconnect nodes on a computer network. Typical examples of network media include copper coaxial cable, copper twisted pair cables and optical fiber cables used in wired networks, and radio waves used in wireless data communications networks.
	54. NIC (n.)	Stands for "Network Interface Card" and is pronounced "nick." A NIC is a component that provides networking capabilities for a computer.
(O)	55. Optical drive (n.)	An optical drive is a type of computer disk drive that reads and writes data from optical disks through laser beaming technology.

	56. Organization (n.)	A group of people who work together in an organized way for a shared purpose.
	57. OS (n.)	Operating System.
	58. OSI (n.)	The Open Systems Interconnection model (OSI model) is a conceptual model that characterizes and standardizes the communication functions of a telecommunication or computing system without regard to its underlying internal structure and technology.
P	59. Peer (n.)	A relationship between two computers on the same network such that they are able to share information without a third computer having to act as a server.
	60. Plug (v.), (n.)	(v) To connect a piece of electrical equipment to an electricity supply. (n) A small plastic or rubber object with two or three metal pins, attached to the end of a wire on a piece of electrical equipment and pushed into a special opening in a wall to connect the equipment to a supply of electricity.
	61. Power supply (n.)	It is an electrical device that supplies electric power to an electrical load.
	62. Process (n.)	A series of actions that you take in order to achieve a result.
	63. Protocols (n.)	A network protocol is an established set of rules that determines how data is transmitted between different devices in the same network.
R	64. Reassign (v.)	To give someone or something a different job, name, or position.
	65. Receiver (n.)	It is the device that receives and decodes signals and then conditions or transforms them into something that another machine or computer understands.
	66. Reliable (adj.)	Able to be trusted or believed.
	67. Request (n.)	To ask for something.
	68. Resources (n.)	A useful or valuable possession or quality of a country, organization, or person.
	69. Retail (n.)	The activity of selling goods to the public, usually in shops.
	70. Retrieval (n.)	The action of obtaining or consulting material stored in a computer system. For example: "online information retrieval".
	71. Role (n.)	The position or purpose that someone or something has in a situation, organization, society, or relationship.
	72. Router (n.)	A piece of electronic equipment that connects computer networks to each other.
	73. Rules (n.)	An accepted principle or instruction that states the way things are or should be done, and tells you what you are allowed or are not allowed to do.

S

- 74. SD Card** (n.)
Secure Digital card: a small piece of electronic equipment used in mobile phones, digital cameras, etc. to store data.
- 75. Sender** (n.)
The sender (source) who creates the message to be transmitted.
- 76. Server** (n.)
A central computer from which other computers get information.
- 77. Setup** (n.)
An arrangement of things that allows something to happen, or the process that prepares this arrangement.
- 78. Shipment** (n.)
A large amount of goods sent together to a place, or the act of sending them.
- 79. Slide** (n.)
One of the screens in a presentation that uses images and texts to give information created on a computer.
- 80. Software** (n.)
The instructions that control what a computer does; computer programs.
- 81. SSID** (n.)
SSID stands for Service Set Identifier and is your network's name. If you open the list of Wi-Fi networks on your laptop or phone, you'll see a list of SSIDs. Wireless router or access points broadcast SSIDs so nearby devices can find and display any available networks.
- 82. Standard** (adj.), (n.)
(adj) Made or done according to a generally accepted set of rules or measurements. (n) a pattern or model that is generally accepted.
- 83. Storage** (n.)
The process of saving and keeping information, music, etc. on a computer.
- 84. Store** (n.)
A large shop where you can buy many different types of goods.
- 85. STP cable** (n.)
Shielded Twisted Pair cable.
- 86. Switch** (n.)
A network switch is a multiport network bridge that uses MAC addresses to forward data at the data link layer (layer 2) of the OSI model.
- 87. Tasks** (n.)
A piece of work to be done, especially one done regularly.
- 88. TCP** (n.)
The Transmission Control Protocol (TCP) is one of the main protocols of the Internet protocol suite. It originated in the initial network implementation in which it complemented the Internet Protocol (IP).
- 89. Tester** (n.)
A person or a machine that tests something.
- 90. Threat** (n.)
A suggestion that something unpleasant or violent will happen, especially if a particular action or order is not followed.
- 91. TIA** (n.)
TIA (Telecommunications Industry Association) is accredited by the American National Standards Institute (ANSI) to develop voluntary, consensus-based industry standards for a wide variety of telecommunications products.

92. To keep track of (v.)

To make certain that you know what is happening or has happened to someone or something.

93. To stand for (v.)

If one or more letters stand for a word or name, they are the first letter or letters of that word or name and they represent it.

94. Topology (n.)

Network topology is the arrangement of the elements (links, nodes, etc.) of a communication network.

95. Troubleshoot (v.)

To discover why something does not work effectively and work to improve it.

U

96. USB Plug (n.)

Universal Serial Bus: a part of a computer to which extra devices such as printers, scanners, and digital cameras can be connected easily.

97. UTP cable (n.)

Unshielded Twisted Pair cable.

V

98. VLAN (n.)

A virtual LAN (VLAN) is a local area network that maps devices on a basis other than geographic location, for example, by department, type of user, or primary application.

W

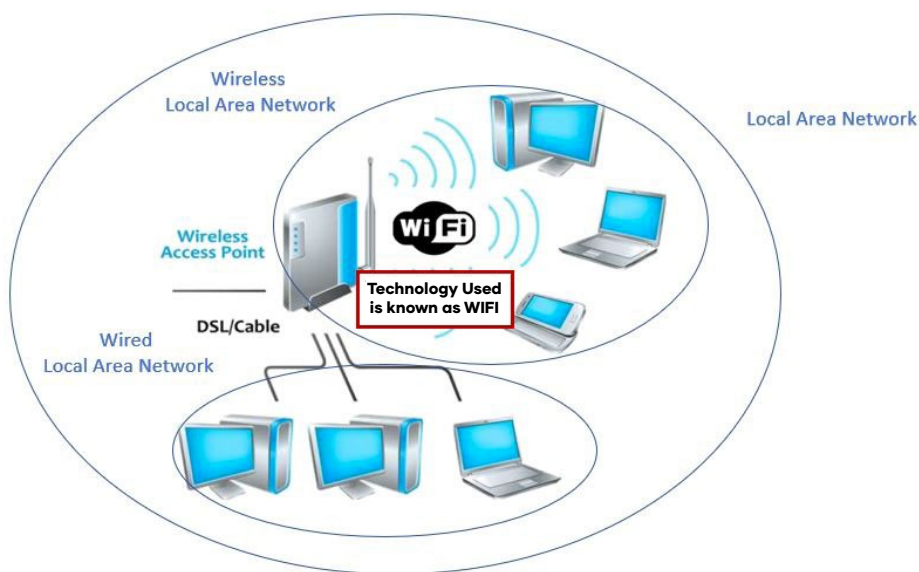
99. WAN (n.)

A wide area network (WAN) is a telecommunications network that extends over a large geographic area for the primary purpose of computer networking.

100. Wireless (adj.)

Using a system of radio signals rather than wires to connect computers, mobile phones, etc. to each other.

Unit 1: Installation of wired and wireless Local Area Networks



Goals: Use their knowledge of English in the comprehension and production of short and clear oral and written texts with the purpose of building a personal critical view in contexts related to installation of wired and wireless Local Area Networks.

Skills: Listening, Reading, Speaking, and Writing.

Project: "Our LAN layout".

★ 19 KEY WORDS

Adapter (n.)	Network media (n.)	Switch (n.)
Device (n.)	NIC (n.)	Tasks (n.)
Host (n.)	OSI (n.)	TCP (n.)
Hub (n.)	Peer (n.)	Topology (n.)
IP (n.)	Protocols (n.)	Wireless (adj.)
Mesh (n.)	Router (n.)	
Network equipment (n.)	Software (n.)	



Lesson 1: Listening Comprehension

BEFORE YOU LISTEN

A. A Local Area Network is a LAN. According to your knowledge, circle the places where you think you could find a LAN.



1.- HOUSE



2.- STREET



3.- GAMER ROOM



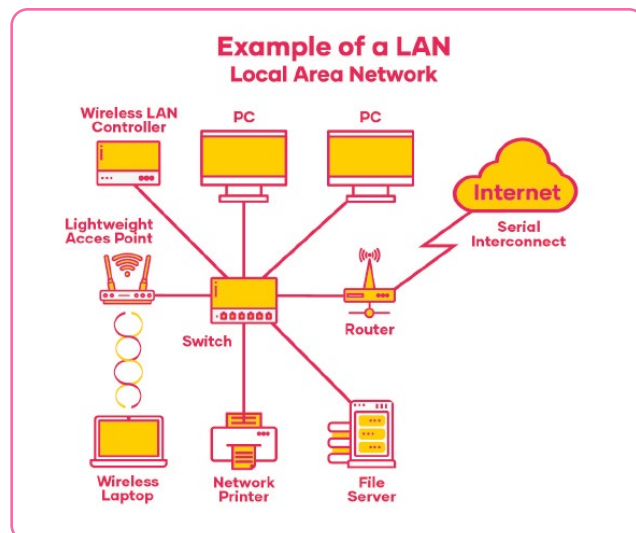
4.- FOREST



5.- CYBER CAFÉ

B. Look at the picture and circle one option to predict the main idea of the audio.

A	LAN types.
B	LAN basis and components.
C	Computers and the Internet.



WHILE YOU LISTEN

Click here to listen 

C. Listen to the audio and check your prediction.

D. Do these components appear in the audio? Circle your answer YES or NO.

- IP SFTP DNS
- Fiber optic HTTP CAT-6
- IMAP T1 TCP POP3
- FTP Ethernet HTTPS
- Telnet SSH ICMP
- TFTP SMTP Wireless

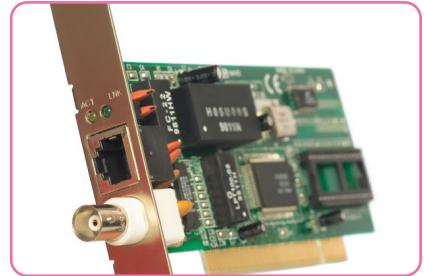
1.- PROTOCOLS

YES NO



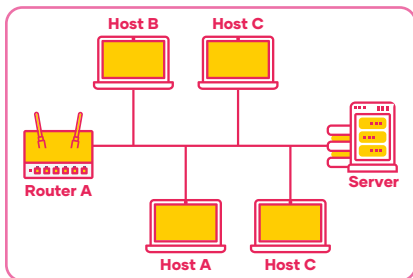
2.- NETWORK EQUIPMENT

YES NO



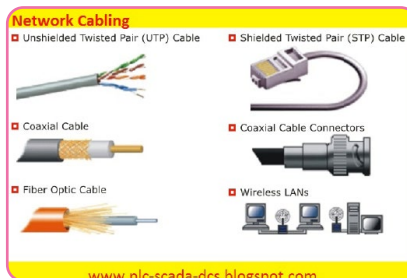
3.- NIC

YES NO



4.- HOSTS

YES NO



5.- NETWORK MEDIA

YES NO



6.- ROUTER

YES NO



7.- NETWORK PRINTER

YES NO



8.- SOFTWARE

YES NO



9.- SMARTPHONE

YES NO

E. Pair quiz! Ask your classmate to answer true or false. Then, switch roles and listen to the audio again to verify your results.

STUDENT A:		TRUE	FALSE
1.	The objective of a LAN is just to use cables.		
2.	Devices need (IP - MAC) addresses so they can talk to each other.		
3.	Switches, routers, and hubs duplicate, repeat, or split the signals from our hosts.		

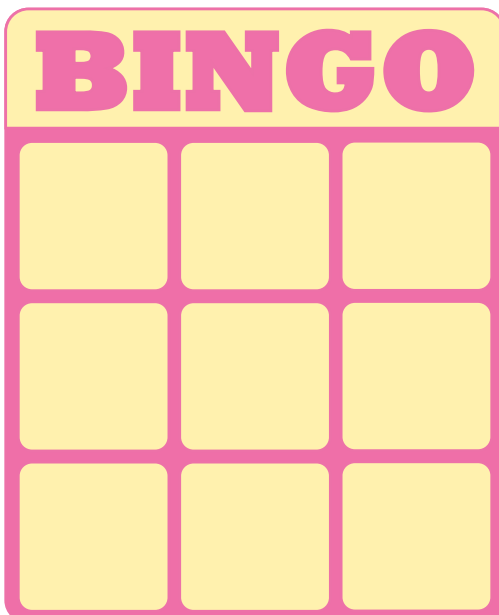


STUDENT A:		TRUE	FALSE
1.	The most common network wire is called UTP.		
2.	For large distance networks, fiber-optic cables are not the best option.		
3.	Protocols are sets of rules that govern how data is transmitted over a LAN. The most common protocols used in a local network are IP, TCP, UDP, ARP, and DHCP.		



AFTER YOU LISTEN

F. Let's play BINGO! Choose 9 words from this box and write one on each of the Bingo boxes. When you are ready, listen to your teacher calling the words until you complete your Bingo card and say BINGO!





Lesson II: Reading Comprehension

BEFORE YOU READ

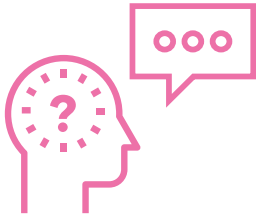
A. Think about the following question and the answers. All of them are correct. Choose one to be your purpose for reading this text:

How can knowing about “computer network models” help me install a LAN successfully?



- A. I can be aware of how data is transmitted from one device to another.
- B. I can understand the role of the protocol and its layers, which permit the transmission of data and its proper wired and wireless connection.
- C. I may be able to predict possible failures in the transmission of data and interconnection between devices.

B. Complete the KWL Chart thinking about what you know about “Computer Network Models” and what you would like to know.



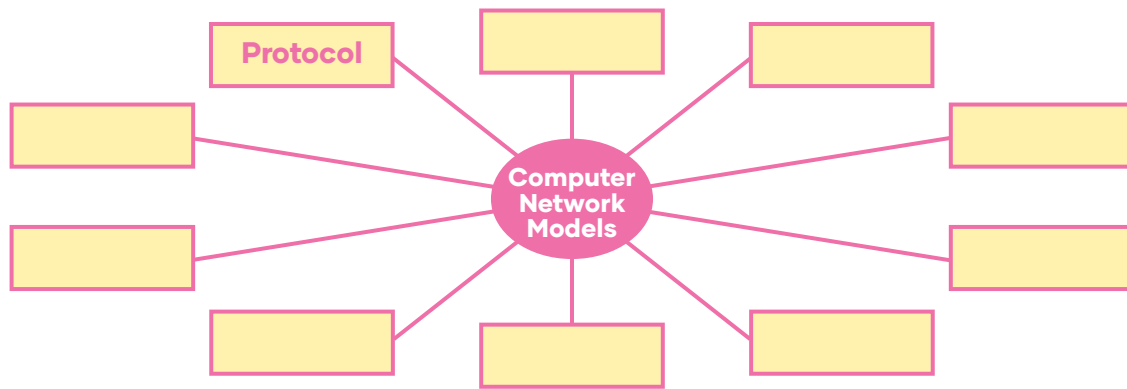
Know	Would like to Know	Learned
- Example: Models are related to protocols.	- Example: What is a network model?	



WHILE YOU READ:



C. What is a noun? A noun is a word that names something, such as a person, place, thing, or idea. In the glossary, they are marked as (n). Read the paragraph and write 9 nouns related to the title of the text: "Computer network models"



COMPUTER NETWORK MODELS

A **computer network** consists of software and hardware that is used to send and receive data from one device to another. The role of hardware is to provide the physical equipment required to send and receive data, while software defines the set of instructions used by the hardware equipment for data transmission. **A simple transmission of data consists of several steps at various layers of a computer network.** In computer network models we will discuss the models in detail to understand how the data is actually transferred and received at a computer level.



Layers of computer network models

1. The main purpose of having several layers in a computer network model is to divide the process of sending and receiving data into small tasks.
2. Dividing a model into layers makes the structure quite simple so that it is easy to identify the issue if it occurs. There are three main components of a computer network model: Sender, receiver, and carrier.

Singh, C. (n.d.). *Computer Network Models*. BeginnersBook.
<https://beginnersbook.com/2019/04/computer-network-models/>

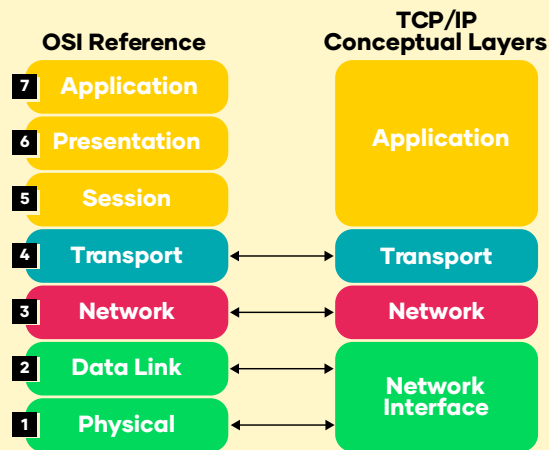
What is the OSI Model?

The OSI model is a logical and conceptual model. It breaks the various aspects of a computer network into seven distinct layers. These layers are kind of like the layers of an onion. The seven layers of the OSI model are a somewhat idealized view of how networking protocols should work. The first three layers are sometimes called the lower layers. They deal with the mechanics of how information is sent from one computer to another over a network. Layers 4 through 7 deal with how application software can relate to the network through application programming interfaces.

What is TCP/IP Model?

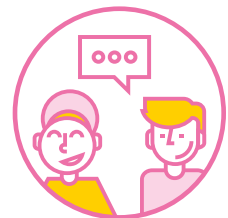
TCP, which stands for Transmission Control Protocol, is a connection-oriented Transport layer protocol. TCP lets a device reliably send a packet to another device on the same network or on a different network.

One key aspect of TCP is that it's always used for one-to-one communications. In other words, TCP allows a single network device to exchange data with another single network device.



AFTER YOU READ:

D. Pair work. Discuss the characteristics presented of the TPC/IP and OSI models in the box. Classify them on page 22 according to the text. Check the answers. When you finish, read them aloud.



1.	It's a logical and conceptual model.	4.	It's always used for one-to-one communications.
2.	It lets a device reliably send a packet to another device on the same network or on a different network.	5.	Layers 4 through 7 deal with how application software can relate to the network through application programming interfaces.
3.	It consists of 7 layers.	6.	It stands for Transmission Control Protocol/ Internet Protocol.

OSI Model	TCP / IP Model

E. Group work. Discuss what you have learned after reading the text. Underline the comment that relates to your conclusions of what you have learned in the third column.



Know	Would like to Know	Learned
- Example: Models are related to protocols.	- Example: Models are related to protocols.	<ul style="list-style-type: none"> - Data is transferred from one device to another through different layers called protocols. - The main purpose of having several layers in a computer network model is to divide a process of sending and receiving data into small tasks. - Dividing a model into layers makes the structure quite simple that makes it easy to identify the <p>Add your discussion outcomes here:</p>

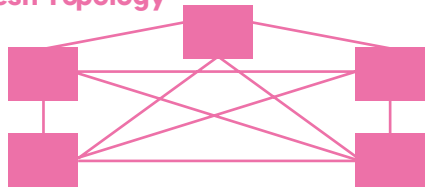
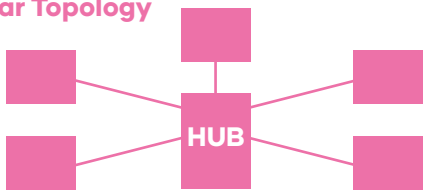
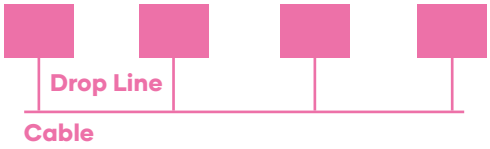
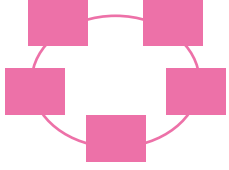
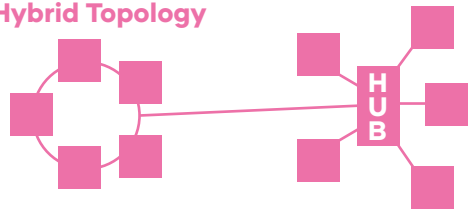


Lesson III: Speaking

WARM UP

In the previous lesson you learned about the logical model of a network. Now let's talk about the physical connection of a network. This is called "Network Topology". It is a geometric representation of how computers are physically connected to each other. There are at least 5 types of topology: Mesh, Star, Bus, Ring, and Hybrid.

A. Match the diagrams from column A with their proper description from column B.

COLUMN A		COLUMN B	
1	Mesh Topology 	A	In this topology, there is a main cable and all the devices are connected to this main cable through drop lines .
2	Star Topology 	B	In this topology, each device is connected to the two devices on either side of it .
3	Bus Topology 	C	A combination of two or more topologies. For example, a combination of Star and Mesh topologies.
4	Ring Topology 	D	In this topology, each device in the network is connected to a central device called hub or switch .
5	Hybrid Topology 	E	In this topology, each device is connected to every other device on the network through a dedicated point-to-point link .

INPUT

B. Read the following dialogue between two technicians talking about a LAN layout.

Context of the dialogue: A client calls a connectivity company to hire a technician to design a LAN for a cyber café. One technician answers the call and tells his colleague about it.

Tech 1: Hello Mark! A customer just called and needs a Local Area Network plan for a cyber café.

Tech 2: What Topology do you think will be appropriate?

Tech 1: It could be a **Star Topology**.

Tech 2: That means a LAN where **each device in the network is connected to a central device called hub or switch**.

Tech 1: Yes. We have to write down the components we will need: First, a **router and a switch**. Did the person mention the number of hosts? Are there printers or other devices?

Tech 2: Yes, there are **5 desk computers, 2 printers, and 2 security cameras**.

CONTROLLED PRACTICE

C. Pair work. Choose a character to roleplay the dialogue (ie. Student A is technician 1, and student B is technician 2).

D. Now switch roles and repeat the dialogue.



FREER PRACTICE

E. Pair work. With your partner, create a similar dialogue changing the information in bold. You can use the following information as a suggestion.

Location	Topology	Hosts / Devices
Cyber café	Star	Computer (desk, laptop, tablet, mobile phone), printers, security cameras, scanner, video game console.
Small Office	Bus	
Multiple floor building	Hybrid	
Gamer Room	Star	

WRAP UP

F. Group work. Using your school supplies, model a network topology and name its components using pen and paper tags. When you have your topology model set up, take a picture and share it with your teacher. This will be a good practice for your final project!



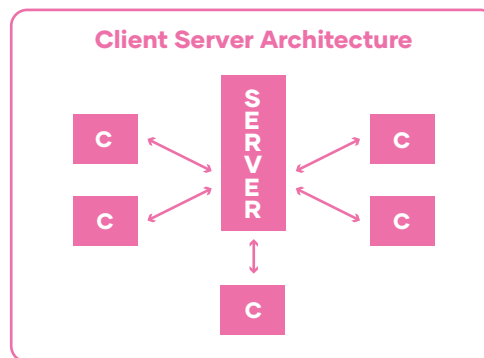
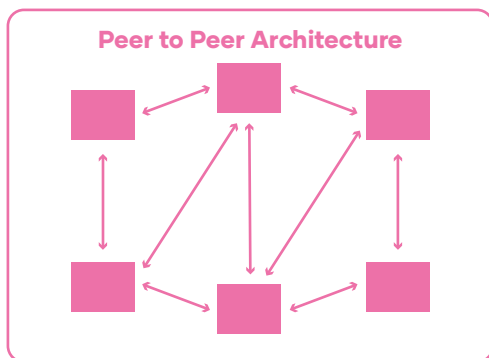


Lesson IV: Writing

PRE WRITING

Computer Architecture: Advantages and disadvantages.

A Computer Architecture is a design in which all computers in a LAN are organized. It defines how computers can get the best performance of a computer network such as better response time, security, scalability, etc. The two most popular computer architectures are P2P (Peer to Peer) and Client-Server.



A. Look at the diagrams and write the corresponding architecture to its definition.



Architecture Computer	Definition
	All the computers in a computer network are connected with every other computer in the network. Every computer in the network uses the same resources as the other computers.
	A central computer acts as a hub and serves all the requests from client computers.



DRAFTING



B. Pair work. Match each architecture with their corresponding 2 advantages, 2 disadvantages, and 1 real-life example. Use the pictures and definitions presented in activity A. to help you. Follow the example.

Peer to Peer Architecture			
Advantages			
1		2	
Disadvantages			
3		4	
Real Life Example			
5			

Client Server			
Advantages			
1	A	2	
Disadvantages			
3		4	
Real Life Example			
5			

Advantages	
A	Data backup is easy and cost effective as there is no need to manage the backup on each computer.
B	Installation of peer-to-peer architecture quite easy as each computer manages itself.
C	Performance is better as the response time is greatly improves because the computer the server is in is more powerful than the other computers in the network.
D	Less costly as there is no central server that has to take the backup.
Disadvantages	
E	Scalability is an issue as connecting each computer to every computer is a headache on a very large network.
F	In case of server failure, the entire network fails.
G	Server maintenance cost is high as the server is the main component in this Architecture.
H	Each computer has to take the backup rather than a central computer and the security measures are taken by all the computers separately.
Real Life Example	
I	Online gaming platforms use Peer to Peer for downloading games between users. Blizzard Entertainment distributes Diablo III, StarCraft II, and World of Warcraft using P2P.
J	Services such as Gmail, Facebook, Amazon, and Google act as Servers.

Bruce A. Hallberg. (2010). *Networking: A Beginner's Guide, Fifth Edition*. United States: McGraw-Hill.

C. Group work. Choose 1 architecture and complete the following chart.
Compare your answers with other teams.



Architecture		
	Advantages	
	Disadvantages	
	Real Life Example	

EDITING

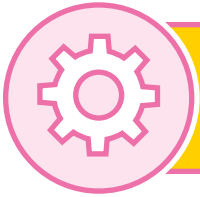


D. Using the information from activities A, B and C, write a description for one type of architecture. Follow the structure to present your ideas in a text. Then, write your description.

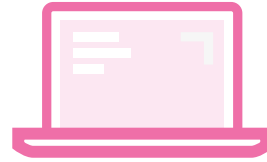
Title: (Name of the architecture chosen)	
Introduction: What is a computer architecture? (1 sentence)	
Body: -Computer architecture definition. - Advantages -Disadvantages	
Closing: 1 Real life example.	

PUBLISHING

E. Now hand in your final version to the teacher (Suggestion: Publish the final outcomes on Padlet)



Project: "Our LAN Layout"



Name of the Project	"Our LAN Layout"
Level	Elementary to Intermediate
Time	90 min
General aim	To present a hand craft layout (maqueta) of a LAN
Language aim	Students will practice all four skills with a main focus on productive skills (speaking and writing).
Resources / Materials	Cardboard, match boxes, glue, scissors and marker
Teacher's role	Facilitator. The teacher will revise the unit activities with the students in order to reinforce the vocabulary and knowledge needed to elaborate the final project.
Student's role	<p>Team member and contributor. Students should participate in group discussions, create manual procedures, collect materials, and do the research needed to finish the project using the information and knowledge developed during the lessons from unit 1.</p> <p>Roles:</p> <p>Group leader: The student coordinates discussions and represents the group.</p> <p>Time keeper: This student is in charge of monitoring work time during the class.</p> <p>Material keeper: This student helps selecting and gathering the materials required.</p> <p>Researcher: This student helps the groups by looking for the answers of the questions that may arise by consulting the internet, this booklet, or asking questions to the teacher.</p>

SITUATION

You and two classmates are applying for a job in a network connectivity company. They ask you to elaborate a LAN layout cardboard model to demonstrate your understanding of installation of wired and wireless local Area Networks. You can choose the location you want **(Cyber café – Small Office – Gamer Room)** from lesson III activity E. Follow the procedure and present your model to the class.

PROCEDURE

- 1.- Complete the chart with the following information from the previous lessons: LAN location, Network Topology, Network Architecture (Name, 2 Advantages, 2 Disadvantages, and 1 Real life example.) Network Media (Wired or Wireless) and Network Equipment (components: router, laptops, desk computer, network printer, etc.)
- 2.- Use the materials to set up an example of your LAN following the topology arrangement.
- 3.- Tag the components.
- 4.- Practice the presentation using the structure given as a guideline. Divide its parts between the members of the group.
- 5.- **Complete the group work check-list and reflection.**
- 6.- Present your layout to the class.

INFORMATION CHART



LAN Location		
Network Topology		
Network Architecture	Name	
	2 Advantages	
	2 Disadvantages	
	1 Real life example	
Network Media		
Network Equipment		

(Examples)

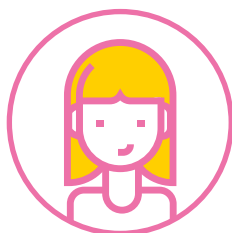


ORAL PRESENTATION GUIDELINE

Good day class! We are group N° _____. My name is _____
and my classmates are: _____
This is our LAN layout project. This LAN is located in a cyber café and the network
topology is Star. The network architecture is a server client. The advantages of
Server client networks are: _____
_____.
and the disadvantages are: _____
_____.
For example: _____
Its components are: _____, _____, _____
Thank you for your attention.

Follow up	Installation of local area network wired and wireless fair. Students can show their work to other classes and explain their models. Students record a video explaining their model.
Variation	Depending on the level of proficiency and internet access, students can research further information about LAN layout, for example: advantages and disadvantages of the topology, include more Real Life examples, name other components emphasizing detail on the wires, connectors, and wireless components. Students may also use the app: lucid.app (It already contains a model that students can use and edit instead of a cardboard model)
Rubric	Group work check-list and reflection. (Students) Rubric to assess the LAN layout and the oral presentation. (Teacher) Pages 82 and 83 from this booklet.

Unit II: Assembly and configuration of computers and portable terminal equipment



Goals: Use their knowledge of English in the comprehension and production of short and clear oral and written texts with the purpose of building a personal critical view in contexts related to assembly and configuration of computers and portable terminal equipment.

Skills: Listening, Reading, Speaking, and Writing.

Project: "Tutorial Video to prepare a device to make it part on a LAN"

★ 20 KEY WORDS

Back up (n.)	Fan (n.)	OS (n.)
Boot (v.)	Hard disk drive (n.)	Plug (v.)
Browser (n.)	I/O (n.)	Power supply (n.)
Built-in (adj.)	Kernel (n.)	Setup (n.)
Connector (n.)	Management (n.)	SSID (n.)
Ethernet (n.)	Motherboard (n.)	Storage (v.)
Expansion slots (n.)	Optical drive (n.)	



Lesson 1: Listening Comprehension

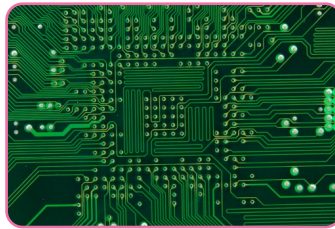
BEFORE YOU LISTEN

A. Look at the following pictures and use your previous knowledge. Are these components inside a computer? Mark YES or NO.



1. HARD DRIVE

YES NO



2. MOTHERBOARD

YES NO



3. USB PLUG

YES NO



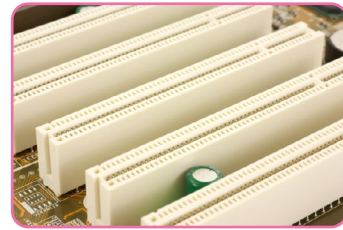
4. POWER SUPPLY

YES NO



5. SD CARD

YES NO



6. EXPANSION SLOTS

YES NO



7. FAN

YES NO

B. Predict the main idea of the audio you are about to listen. Read the following alternatives and circle your answer.

- A.** A description of the main components inside a computer.
- B.** How to assembly a computer
- C.** How to use computer hardware.

WHILE YOU LISTEN

Click here to listen 

C. Listen to the audio and check your prediction.

D. Listen to the audio again and fill in the gaps with the words in the box.

components – laptop – motherboard
CPU – brain – commands
hard drive – data – magnetic platter

"Let's take a look inside and learn about the various _____ that make a computer work. Whether it's a desktop computer or a _____, every computer has a large circuit board called a _____. This contains some of the most important parts of the computer such as the _____, also known as the Central Processing Unit, or processor. The CPU can be considered the _____ of the computer because it processes information and carries out _____."

"The _____ provides long term storage keeping all of the computers _____ even when it's turned off. Many hard drives use a _____ to store data, but many newer computers have solid state drives which are faster and more durable, but also more expensive."

Computer Basics: Inside a computer. (n.d.). GCFGlobal.

<https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/>

E. Quiz your classmate. Listen to the audio and ask your classmate to answer true or false. Then, switch roles.

Click here to listen 

STUDENT A:		TRUE	FALSE
1.	The motherboard contains the CPU.		
2.	The CPU is considered the brain of the computer.		
3.	The Heat Sink is part of the wireless card.		



STUDENT B:		TRUE	FALSE
1.	RAM stands for Random Access Memory.		
2.	The Expansion Slots allow you to upgrade your computer by adding more expansion cards.		
3.	The Wireless card helps you to expand the RAM.		

AFTER YOU LISTEN

F. Group Game: Pictionary! Choose a component from the box and draw it. Make your group mates guess the name and have fun!

PROCEDURE

1.- Check the meaning of the following words, which are hardware components of a computer.

**Fan – Optical drive – Hard disk drive
Connector – Power supply – Expansion Slots
Motherboard – Wireless Card – CPU – RAM
Desktop computer – Laptop computer – Battery**

2.- Gather a group of 4 classmates to play.

3.- One of you will secretly choose a word and will start drawing for a minute in a paper or on the board..

4.- The rest of the group will try to guess the drawing before the time is out.

5.- If you want, you can assign points to the group member who guesses the drawing.

6.- Don't forget to guess and say the word in English!





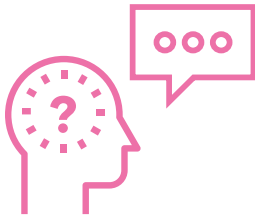
Lesson II: Reading Comprehension

BEFORE YOU READ

A. Look at the pictures. Circle the ones that are **NOT** Operating Systems.



B. Complete the KWL Chart thinking about what you know about "Functions of Operating Systems" and what you would like to know about it.



Know	Would like to Know	Learned
<ul style="list-style-type: none"> - They are very important for computers and computer networks. - 	<ul style="list-style-type: none"> - What are the functions of Operating system? - 	

WHILE YOU READ

C. Identify the titles for each paragraph:

A	Summary
B	Functions of an Operating system
C	What is a Kernel?
D	What do Operating Systems do?
E	Types of kernels

1

A computer system can be divided roughly into four components: the hardware, the operating system, the application programs, and a user. The hardware, the central processing unit (CPU), the memory, and the input/output (I/O) devices provide the basic computing resources for the system. The application programs such as word processors, spreadsheets, compilers, and web browsers define the ways in which these resources are used to solve the users' computing problems. The operating system controls the hardware and coordinates its use among the various application programs for the various users.



2

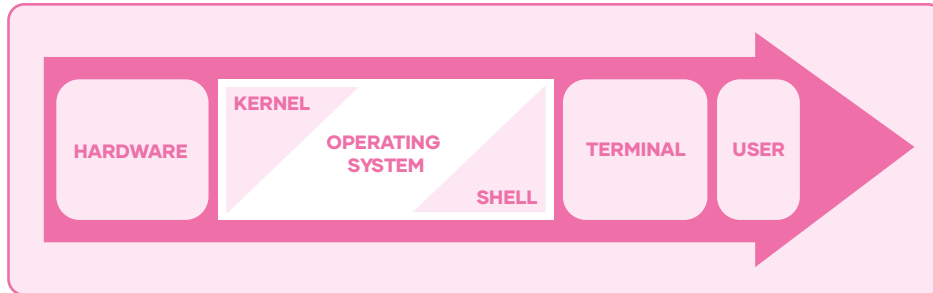
These are the main functions of an Operating System:

- 1. Process management:** A program can't do anything unless its instructions are executed by a CPU. A program in execution is a process. For example, a word-processing program being run by an individual user on a PC is a process.
- 2. Memory management:** Main memory is a repository of quickly accessible data shared by the CPU and I/O devices. The CPU reads instructions from the main memory during the instruction-fetch cycle and both reads and writes data from the main memory during the data-fetch cycle.
- 3. File management:** The operating system maps files onto physical media and accesses these files via the storage devices. File management is one of the most visible components of an operating system. Computers can store information on several different types of physical media, for example, a flash drive.
- 4. Device Management:** As we have seen, an operating system is a resource manager. The system's CPU, memory space, file-storage space, and I/O devices are among the resources that the operating system must manage.
- 5. I/O System Management:** (Input/Output) One of the important jobs of an Operating System is to manage various I/O devices including mouse, keyboards, touch pad, disk drives, display adapters, USB devices, Bit-mapped screen, LED, Analog-to-digital converter, On/off switch, network connections, audio I/O, printers etc.
- 6. Security:** If a computer system has multiple users and allows the concurrent execution of multiple processes, then access to data must be regulated. For that purpose, mechanisms ensure that files, memory segments, CPU, and other resources can be operated on by only those processes that have gained proper authorization from the operating system.
- 7. Networking:** A network operating system is an operating system that provides features such as file sharing across the network, along with a communication scheme that allows different processes on different computers to exchange messages.

3

It is the core component of the Operating System. It interacts directly with the hardware and provides low-level services to upper-layer components.

4



1. Monolithic

It is a single, static binary file that runs in a single address space. This approach—known as a monolithic structure—is a common technique for designing operating systems. An example of such limited structuring is the original UNIX Operating System, which consists of two separable parts: the kernel and the system programs.

2. Microkernels

We have already seen that the original UNIX system had a monolithic structure. As UNIX expanded, the kernel became larger and more difficult to manage. In the mid-1980s, researchers at Carnegie Mellon University developed an Operating System called Mach that modularized the kernel using the microkernel approach. This method structures the operating system by removing all nonessential components from the kernel and implementing them as user level programs that reside in separate address spaces. The result is a smaller kernel.

5

- An operating system is a software which acts as an interface between the end user and computer hardware.

- An Operating system has multiple functions, for example: process management, Input / Output system, networking, etc.

-The kernel is the central component of a computer operating systems. The only job performed by the kernel is to manage the communication between the software and the hardware.

The two most popular kernels are Monolithic and Micro Kernels.

Adapted from: Silberschatz, A., Galvin, P. B., & Gagne, G. (2018). *Operating System Concepts* (10th ed.) Wiley.

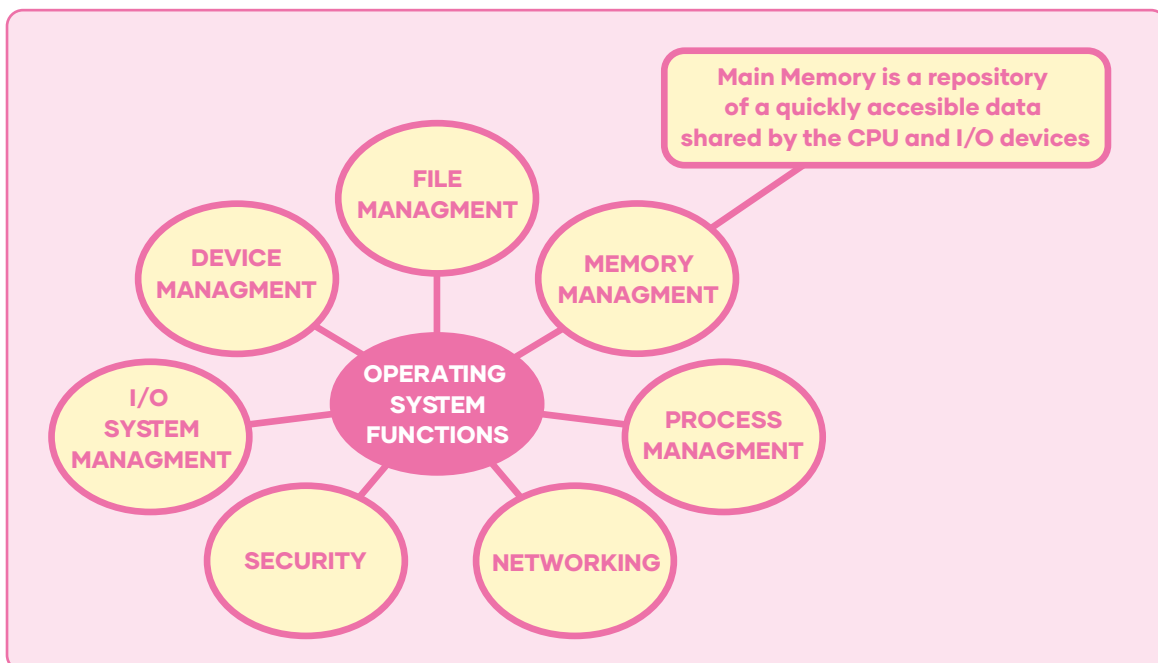
AFTER READING



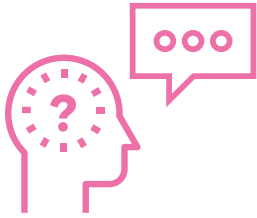
D. Pair work. Match the OS function in column A to its corresponding definition in column B. Check the answers. Then, read the correct answers aloud.

Column A		Column B
1	I/O System Management	A. One of the important jobs of an Operating System is to manage various I/O devices including mouse, keyboards, touch pad, etc.
2	File Management	B. Resources can be operated on by only those processes that have gained proper authorization from the operating system.
3	Security	C. Provides features such as file sharing across the network, along with a communication scheme that allows different processes on different computers to exchange messages.
4	Networking	D. The operating system maps files onto physical media and accesses these files via the storage devices.

E. Group work. Choose 3 Functions of an Operating system and create a poster to explain what their functions are to your other classmates. Draw a picture that can help learning the function. Paste it on the wall.



F. Group work. What have you learned? Discuss about what you have learned after reading the text. Write a short note or an idea from the text that relates to your learning.



Know	Would like to Know	Learned
<ul style="list-style-type: none">- They are very important for computers and computer networks.-	<ul style="list-style-type: none">- What are the functions of Operating system?-	



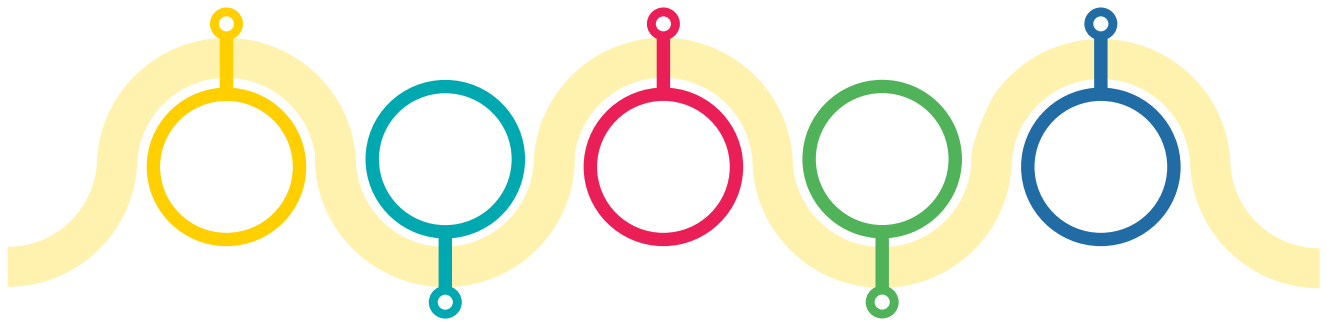


Lesson III: Speaking

WARM UP

5 STEPS TO INSTALL AN OS CONVERSATION

A. According to your previous knowledge and ideas, organize the steps to install an Operating System (A, B, C, D or E) in the timeline.



A	B	C	D	E
Backup your data. Boot your Operating System from your installation disc or flash drive.	Enter your product key. Choose your installation type.	Research your software compatibility. Obtain your new Operating System.	Wait for the Setup program to load. Install your drivers and programs. Once the installation is complete, you will be taken to your new desktop.	Check the system requirements. Decide whether to purchase or download it.

Sandler, C. & Badgett, T. (2010). *Fix Your Own Computer for Seniors For Dummies* (R). Wiley Publishing.

B. Check the answers with your teacher and use this information as a reference for the lesson and the unit project.

INPUT

C. Read the following dialogue about installing an Operating System.

SITUATION

Two technicians work in a network connectivity company. One of them receives a call from a client that is working from a mining pit and needs remote assistance through a phone call. The technician explains the situation to his/her colleague and prepares to assist the client.

Tech 1: Hello Mark! A client just called and needs help installing an Operating System.

Tech 2: Ok! First, I need to know, what kind of device is it? What is the OS he wants to install? RAM and Hard Drive capacity? And what kind of software or apps will he use?

Tech 1: It is a **desk computer**. The operating system he wants to install is **Windows 10**. The computer has a **RAM memory of 8 GB** and the Hard Drive has a **500 GB space**. He needs to run **Microsoft office and Autocad**.

Tech 2: Ok! We have **checked the system requirements and researched the software compatibility**.

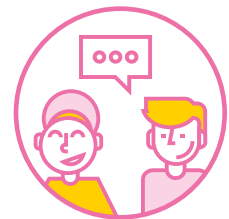
Tech 1: Now, he has to **back-up the data and boot of the Operating System from the flash drive**.

Tech 2: **Enter the product key and Wait for the setup program to load**.

Tech 1: Now, He can install the drivers and programs he wants to use!

D. Pair work. Choose a character to roleplay the dialogue. (ie. Student A technician 1, and student B technician 2)

E. Now, switch roles and repeat the dialogue.



FREER PRACTICE

F. Pair work. With your partner, create a similar dialogue changing the following information:

- **Device (Tablet, laptop, mobile phone)**
- **Operating System (Linux, Mac OS)**
- **RAM (4 GB, 16 GB)**
- **Hard Drive (250 GB, 500 GB, 1TB)**
- **Software or App (Video games, Design app, video edition)**

WRAP UP

G. Rank the most important steps for installing an Operating System according to your opinion from 1 to 5. Number 1 is the most important one and Number 5 is the least important one in your opinion. Compare your answers with other students.



Check the system requirements - Decide whether to purchase or download
Research your software compatibility - Backup your data
Boot from your installation disc - Install your drivers and programs

1. _____
2. _____
3. _____
4. _____
5. _____



Lesson IV: Writing

PRE WRITING

"How to connect your devices to a LAN?" – Video tutorial script

A. Once your computer is assembled and your OS is installed you can connect your computer to a LAN. Read the following steps and use them as reference for the elaboration of a video tutorial script.



Step 1:	1. Gather your equipment To set up a LAN, you will need: - A network switch - or a router - broadband connection - An ethernet cable, plus extra ones for every device you want to connect via cable - A computer -All the rest of your devices
Step 2:	2. Connect the first computer: - On a Windows PC: Using a network switch or router for the first time should bring up the 'Set up a network' wizard - an easy and simple way of getting things set up automatically. - On a Mac: Go to System Preferences, then Network, Built-In Ethernet, Advanced.
Step 3:	3. Set up your Wi-Fi Change the SSID to a custom name to differentiate it from your neighbors' networks and create a password.
Step 4:	4. Connect to the internet If you're setting up a new router and/or internet connection, on the other hand, you'll need to follow the instructions given to you by your broadband provider or router manufacturer.
Step 5:	5. Connect the rest of your devices Whether you're connecting your gadgets to the LAN via Wi-Fi or ethernet cable, the time has come to get it all hooked up. This includes other computers, laptops, smartphones, tablets, TV set top boxes, video games consoles, streaming sticks - anything that you might need to get online.
Step 6:	6. Share! To connect via Wi-Fi, turn on Wi-Fi on your device, and select your home network from the list. Connecting with an ethernet cable is far simpler - just plug one end into your network switch or router and the other into your device.

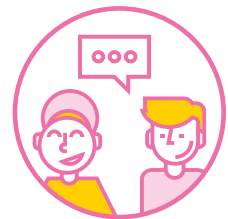
DRAFTING

B. Look at the following structure for writing a script for a short video tutorial. In your notebook, write a draft video tutorial script containing the following information in the same order.

- Greetings and your name:
- Name of your channel:
- Name of the tutorial: "How to connect your devices to a LAN?"
- Main steps (summary or name only the most important 3)
- Closing ideas – Recommendation (You can create one or take it explicitly from the text)
- Good bye

REVISING

C. Pair work. Use the following chart to revise your classmate's drafting. Add notes to the aspects that need improvement in the Observations column.



Component	Yes! Completed	Not yet!	Observations
Greetings: Name of your channel: Name of the tutorial:			
Steps:			
Closing ideas and recommendations:			

EDITING



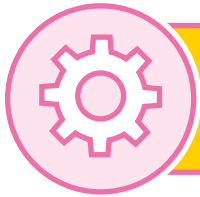
D. Using the following layout, rewrite your video tutorial script taking into account your classmate's and teacher's feedback.

"How to connect your devices to a LAN?" – Video tutorial script

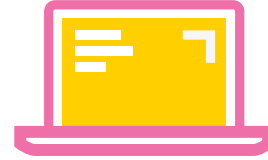
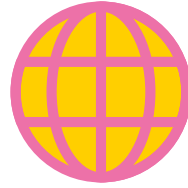
Greetings: Name of your channel: Name of the tutorial:	
Steps:	
Closing ideas and recommendations:	

PUBLISHING

E. Now hand in your final version to the teacher.



Project: "Tutorial Video to prepare a device to make it part on a LAN"



Name of the Project:	"Video tutorial to prepare a device to make it part on a LAN"
Level:	Elementary to Intermediate
Time:	90 min
General aim:	To create a video tutorial on how to prepare a device to make it part of a LAN.
Language aim:	Students will practice all four skills with a main focus on the productive skills (speaking and writing)
Resources / Materials:	Video script – Smartphone or camera
Teacher's role:	Facilitator. The teacher will revise the unit activities with the students in order to reinforce the vocabulary and knowledge needed to elaborate the final project.
Students' roles:	<p>Team member and contributor. The students should participate in group discussions, recording of the video, preparing, recording, and editing the video, and do research in order to finish the project using the information and previous knowledge developed in the lessons from units 1 and 2.</p> <ul style="list-style-type: none">- Group leader: The student coordinates discussions and represents the group.- Time keeper: This student is in charge of monitoring work time during the class.- Video Director: This student is in charge of the process of practicing, recording, and editing. He or she can assign part of these tasks to other group members to achieve the final video.- Script director: This student helps the group making sure of the writing process. He or she can ask for other classmates' feedback, the teacher or a dictionary. The student may also help the video director during the practicing of the script.

SITUATION

You have learned the main parts of a computer hardware, how to install an operating system, and how to make your device part of a LAN. Now, you want to help other people to do this through a **video channel**. You have prepared a short script and now, you can use that skill to elaborate your first video.

PROCEDURE

1.- In groups of 4 to 6 students, elaborate the video script considering the following information:

- Greetings and your names:
- Name of your channel:
- Name of the tutorial:
- Name de devices you are going to connect and its components such as: Type of device, RAM and hard drive memory, Operating system, software, and apps it will be used for.
- Name 5 steps on how you installed the OS.
- Name 3 steps to connect it to a LAN.
- Closing recommendations
- Good Bye!

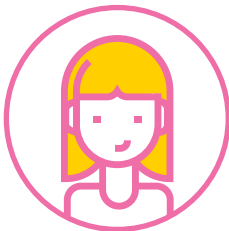
2.- Divide the script into the members of the group and practice your part.

3.- Complete the group work check-list and reflection.

4.- Record the video.

Follow up	Students can upload their videos to a platform. This could be a youtube channel, Padlet project or Flipgrid discussion where students can provide feedback on the video highlighting the positive aspects of their recordings.
Variation	Instead of recording a video, the students could record an audio podcast or a live presentation of their work.
Rubric	Group work check-list and reflection. (Students) Rubric to assess the video. (Teacher) Pages 84 and 85 from this booklet.

Unit III: Installation and exploitation of productive application software



Goals: Use their knowledge of English in the comprehension and production of short and clear oral and written texts with the purpose of building a personal critical view in contexts related to installation and exploitation of productive application software.

Skills: Listening, Reading, Speaking, and Writing.

Project: "Digital Productive Software Presentation".

★ 18 KEY WORDS

Abroad (adv.) (n.)	File (n.)	Store (n.)
Address (n.)	Mail (n)	Slide(n.)
Application (n.)	Organization (n.)	Server (n.)
Chain (n.)	Request (n.)	Shipment (n.)
Client (n.)	Resources (n.)	
Domain (n.)	Retail (n.)	
Employee (n.)	Role (n.)	



Lesson 1: Listening Comprehension

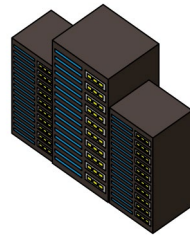
BEFORE YOU LISTEN

A. Look at the icons and unscramble the words related to servers, software, and applications.



ENTCLI

1. _____



VERSER

2. _____



ILMA

3. _____



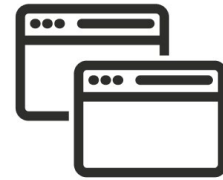
LEFI

4. _____



RESSADD

5. _____



CATIONAPPLI

6. _____

WHILE YOU LISTEN

B. You are about to listen to a person presenting about servers. Predict the topics that will be mentioned with a check mark.

1. What a server is.
2. Different types of servers.
3. How servers work.
4. Server Operating Systems.

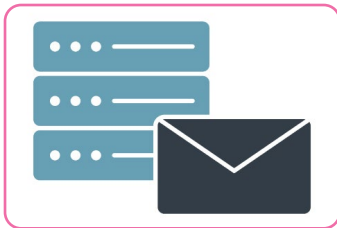
WHILE YOU LISTEN

Click here to listen 



C. Listen to the audio and check your predictions. Then, compare your answers with a classmate.

D. Listen again and match the server with its function. Check your answers with a partner.



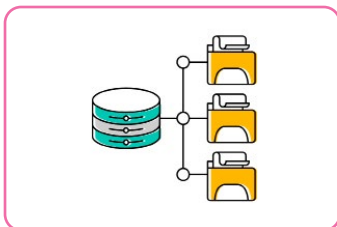
1. MAIL SERVER



2. WEB SERVER



3. DNS SERVER



4. FILE SERVER

A) Domain Name System (DNS) servers are application servers that provide name resolution to client computers.

B) Stores and distributes files.

C) Receives emails sent to a user and stores them.

D) It is a special kind of application server that hosts programs and data requested by users across the Internet or an Intranet.

Recording adapted from: *IT explained: Server*. (n.d.). Paessler: the monitoring experts.

<https://www.paessler.com/it-explained/server>

AFTER YOU LISTEN

E. Group Game: Spelling Contest. Spell the words correctly.

PROCEDURE

- Form a group of 5 students to participate.
- One of the students writes the following words on pieces of paper and puts them in a bag. He or she will be the judge.

**Application – Address – Mail – Server – File – Client
Request – Protocol – Task – Web Server – DNS Server
Resources – Role – Domain**

- The other 4 students divide into two teams, with two participants on each team.
- The students take turns picking words from the bag. The judge reads the word. The student who picked that word must spell it.
- The judge assigns one point to the corresponding team when a student spells a word correctly. **The team with the most points wins the contest!**



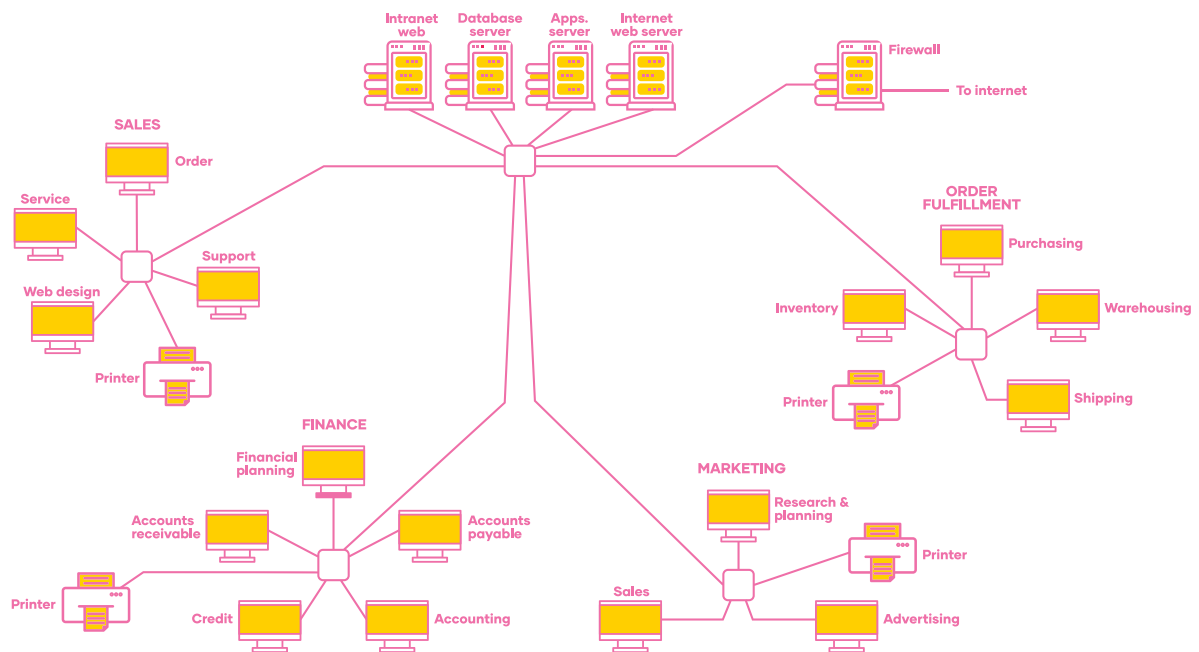


Lesson II: Reading Comprehension

BEFORE YOU READ

A. An IT Computer system is a network composed of people and computers that processes or interprets information. Look at the picture, read the question, and circle the correct answer(s).

A simplified IT Computer System Layout



1. How many servers can you see in the picture?

- A. 4
- B. 3
- C. 5

2. How many network departments are there in the picture?

- A. 4
- B. 3
- C. 5

3.- What type of business would use this architecture?

- A. A fast Food Chain
- B. A fashion Retail Store
- C. A travel Agency

WHILE YOU READ

B. Read the following text together and select the main purpose of the text from the options below.



- A) To explain why Information Systems are important for different businesses.
- B) To present typical scenarios related to IT Systems.
- C) To talk about famous companies.



DISTRIBUTED INFORMATION PROCESSING SYSTEMS

Realistically, modern IT (Information Technology) system architectures generally rely on multiple computers connected by networks of communication **channels to achieve their goals**. In all but the smallest organizations, input data is **collected from separate locations throughout the organization, stored, processed, and distributed to other locations within the organization**. Since modern computer hardware and networking equipment is plentiful and inexpensive, it is practical to distribute computing capability to everyone who needs it. Furthermore, the availability of the Internet and alternative structures, such as satellite communications, make global data communication practical. **Web access, organization intranets, email capability, analysis tools, such as Microsoft Excel, and document preparation tools** are widely available and are considered essential business tools throughout most organizations. **Collaboration between different organizations**, particularly in the area of automated business-to-business purchasing and sales, is commonplace.

The system must be able to reliably store and protect large amounts of organizational data. For many organizations, **customers outside of the organization may also need access to the system to get information and to make purchases**.

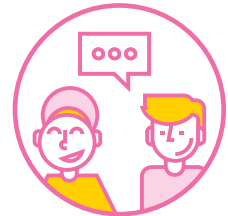
Consider a few typical simple scenarios:

- A **global fast food** chain collects data each day from each of its restaurants worldwide to establish sales figures and determine sales trends. This allows the company to determine which locations are most productive and which locations need assistance, which items sell best, and which need to be modified or replaced, and so on.
- A **large travel Agency** conducts much of its business online, using travel agents located all over the world. It maintains Web servers that have immediate access to large databases of client information and travel information, as well as continual and instant access to airline and hotel reservation systems to determine current airfares, seat availability, and hotel room availability.

- A **large Web-based retail sales organization** sells large quantities of a wide variety of merchandise (Think Amazon or Wal-Mart.) Orders initially come in to a central facility, where they are billed. Inventory is stored in warehouses in various countries and local regional areas to expedite delivery and reduce delivery costs. The system must be able to distribute orders to the various regional facilities efficiently.

Adapted from: Englander, I. (2009). *The Architecture of Computer Hardware, Systems Software, & Networking: An Information Technology Approach* (4th ed.). Wiley

C. A cognate is a word that has the same meaning and similar spelling (or sound) in two different languages. For example, gratitude in English means the same as gratitud in Spanish. How many can you identify in the text above? Read the text again with your partner to see who can identify more cognates.



STUDENT A	STUDENT B
multiple	modern

D. It is clear that large businesses and organizations need IT Systems. Can you match the organizations below with their particular needs?

ORGANIZATION

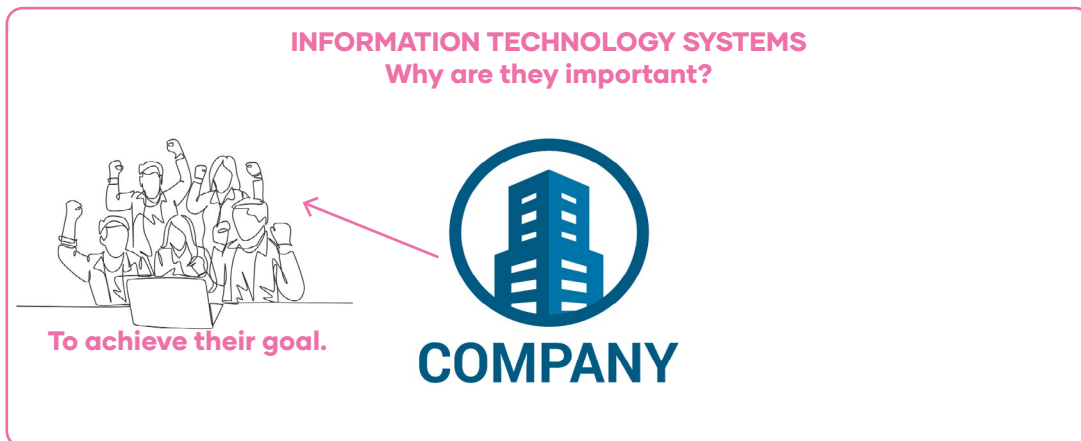
1. A global fast food chain.
2. Travel organization.
3. Retail Store.

NEED

- A) Instant access to airline and hotel reservation systems.
- B) Distribute orders to the various regional facilities efficiently.
- C) Collect data each day from each of its restaurants.

BEFORE YOU READ

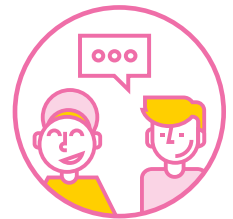
- E. Group Work. Choose a business that has at least one of following departments: sales, marketing, finance, and order fulfillment (for example: A fast food chain, Retail stores, Supermarket, or a travel agency). Create a poster with a diagram explaining their needs, as they relate to an Information Technology System (IT System). Consider the information highlighted in the text, and follow the model below:



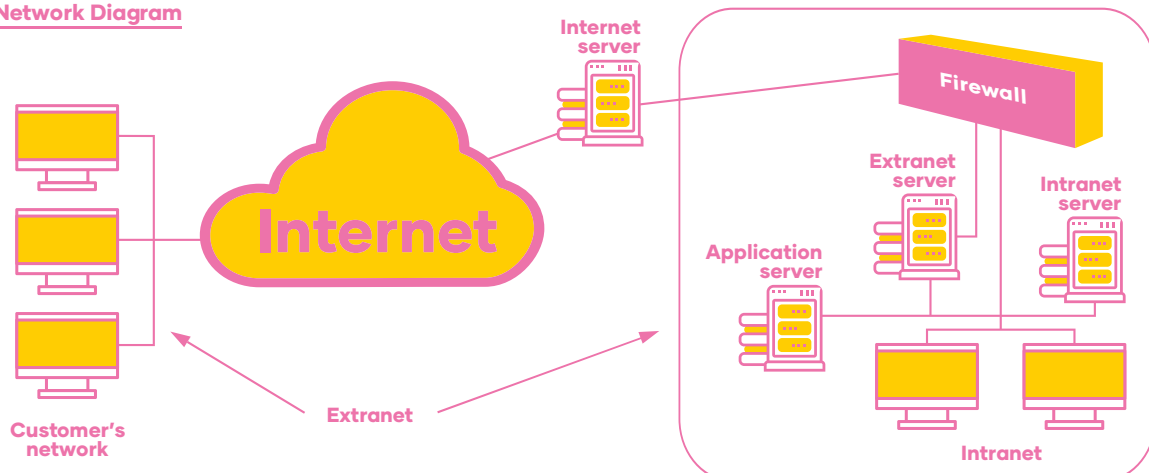
Lesson III: Speaking

WARM-UP

- A. Look at the Network Diagram below and answer. What can you see in the picture? For example: I see three servers, there is/are...



Network Diagram



What are Intranets and Extranets?

An **Intranet** is a private network, operated by a large company or other organization, which uses internet technologies, but is insulated from the global internet.

An **Extranet** is an intranet that is accessible to some people from outside the company, or possibly shared by more than one organization.

Adapted from: Schofield, J. (2010, September 9). *What are intranets and extranets?* BBC.

<http://www.bbc.co.uk/webwise/guides/intranets-and-extranets>

INPUT

B. Look at the following dialogue between a technician and a client.

Context of the dialogue: A client calls a connectivity and networking company to ask for information about productive software for a specific business. The technician provides the information needed.

Client: Hello! My name is Lucy and I'm the owner of a **cosmetic store**. I would like to hire your company to help my business using productive software within a computer network.

Technician: Yes sure! What type of service are you interested in?

Client: I would like to have a platform **that shows my employees which cosmetics are available for purchase**.

Technician: Ok. That could be accomplished with an intranet service.

Client: Oh! I would like to know what that is?

Technician: It's a private network, which uses internet technologies, but it's insulated from the global internet.

Client: Perfect! I would also like my clients **to be able to buy** our **cosmetics by ordering them online**.

Technician: Ok! We will need to develop an extranet service.

Client: What is that exactly?

Technician: For example, a public website that is accessible to people from outside the company, so that they can order products and buy them.

Client: Ok! Excellent! I understand! It is like the **bank**. They use intranet and extranet. Intranet **to make bank administration requirements** and extranet: **to let users manage their personal information, for example, their current financial statements**.

Technician: In simple words that's it! We will need to estimate the costs of the servers and other technical details.

CONTROLLED PRACTICE

C. Each student will choose a character to roleplay the dialogue (ie. Student A is technician 1, and student B is the client), and then perform the roleplay.

D. Now switch the roles, and repeat the dialogue.



FREER PRACTICE

E. Pair work. With a partner, create a similar dialogue replacing the information that is underlined with new content related to other businesses. For example: A Pizza place, Logistics Companies, Fashion Retail Store or Universities.

WRAP UP

F. Go to the internet and research for companies that use an intranet and an extranet, and write a short sentence to explain how they use them. Compare your chart with the other class groups to see which group can collect more examples.



	Business	Intranet	Extranet
1.	Pizza place	To manage their sales and accounting processes.	To let clients order a pizza.
2.			
3.			
4.			
5.			
6.			





Lesson IV: Writing

PRE WRITING

A. Did you know that servers use their own Operating Systems? For example, one of the most famous is “Windows Server” mentioned in Lesson I. Read the following chart and use its information to elaborate a review about Operating systems for servers and clients.

Server Operating Systems vs Operating Systems

Server Operating System	Client Operating System
Windows Server, Mac OSX Server, Red Hat Enterprise Linux, Ubuntu.	Windows 10, Mac OS, Linux, Android.
It can be used to provide services to multiple clients.	It serves a single user.
It can serve multiple clients at a time.	It serves a single user at a time.
It is a complex operating system.	It is a simple operating system.
It runs on the server.	It runs on the client devices like laptop, computer, smartphone, etc.
It is an operating system that is designed to be used on servers.	It is an operating system that operates within desktop or laptop.
It provides more security.	It provides less security.
It has greater processing power.	It has less processing power.
It is more stable.	It is less stable.
It is highly efficient.	It is less efficient.

Adapted from: *Difference between Server OS and Client OS.* (2020, July 2). GeeksforGeeks.
<https://www.geeksforgeeks.org/difference-between-server-os-and-client-os/>

DRAFTING



B. Pair work. Connectors are words that connect two sentences, in order to make them coherent. With your partner, discuss and choose 5 characteristics from each Operating System in activity A, and contrast them using a connector as seen in the example below:

Connectors:

conversely (por el contrario) - **while** (mientras) - **however** (sin embargo)

Example:

Server Operating Systems can be used to provide services to multiple clients, while client Operating Systems serve a single user.

1.
2.
3.
4.
5.

REVISING



C. Group work. Exchange your sentences with a group member and correct each other's work, paying attention to the following aspects.

Aspect		Yes!	Not yet!
1.	Each sentence contains one characteristic from a server operating system, and one from a client operating system.		
2.	The two sentences are joined by a connector. (e.g.- conversely, while or however)		
3.	The sentences start with a capital letter and end with period.		

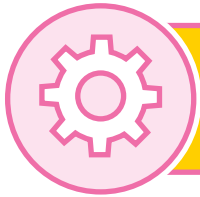
EDITING

D. Write a review comparing Operating Systems for Servers v/s Clients. Follow the provided outline.

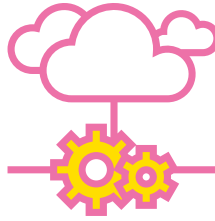
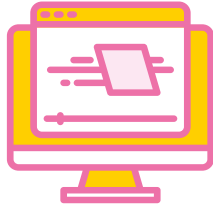
Title:	
Introduction	Did you know that Servers use specially designed Operating systems? For example, one of the most famous ones is "Windows Server".
Comparison (From activity B) 5 sentences	Server and client OP are very different. Server Operating Systems can be used to provide services to multiple clients, while client Operating Systems serve a single user.
Provide examples of Operating systems	In the world of network connectivity, you can find many other operating systems, for example: _____, _____ and _____. The selection of your system will depend on your particular business or personal needs.

PUBLISHING

E. Now hand in your final version to your teacher.



Project: “Productive Software Digital Presentation”



Name of the Project	“Productive Software Digital Presentation”
Level	Elementary to Intermediate
Time	90 min
General aim	To elaborate a PPT Presentation to inform about Installation and exploitation of productive software applications.
Language aim	Students will practice all four skills with an emphasis on the productive skills (speaking and writing).
Resources / Materials	Computer, Microsoft Office, Power Point (alternatively other graphic presentation software like Google Slides, prezi or other)
Teacher's role	Facilitator. The teacher will revise the unit activities with the students in order to reinforce the vocabulary and knowledge needed to elaborate the final project.
Students' roles	<p>Team member and contributor. The students should participate in the group discussions, software procedures and research in order to finish the project using the information, and previous knowledge developed in the lessons from unit 3.</p> <p>Roles:</p> <ul style="list-style-type: none">-Group leader: The student coordinates discussions and represents the group.-Time keeper: This student is in charge of monitoring work time during the class.-Elementary technician: This student will assist the group by helping to answer questions related to the software. This student can be helped by other students and ask the teacher (English or technical specialty) for assistance , and do research using the internet or other media.-Researcher: This student helps the groups by looking for the answers of content questions that may arise consulting the internet, this booklet, or the teacher.

SITUATION:

Microsoft Office is a suite of applications for business productivity. Power Point is one of those applications. It is a presentation graphics program, used to create computerized slide shows to accompany all types of public speaking, sales pitches, lessons, informational meetings, and so on. In this project, you will create a presentation to inform a company owner about the requirements and characteristics of Installation and exploitation of productive software applications.

PROCEDURE

1.- In groups of 4 to 6 students, elaborate a PowerPoint Presentation considering the following information:

Greetings and group members' names:

- Title of the presentation: "Installation and exploitation of productive software application"
- Introduction to the most common servers (DNS, WEB, MAIL, and FTP). – (Lesson I – Activity D).
- 2 Examples of Distributed Information Processing Systems. – (Lesson II – Activity D)
- 2 Examples of intranet and extranet networks. – (Lesson III – Activity F)
- Contrast between Server Operating Systems and Client Operating systems. – (Lesson IV: Activity D)
- 2 to 3 Examples of different Operating systems (Windows Server, Red Hat Linux or others) (Lesson IV: Activity D)
- Goodbye!

2.- Practice the presentation using the provided structure as a guideline. Divide its parts among the members of the group.

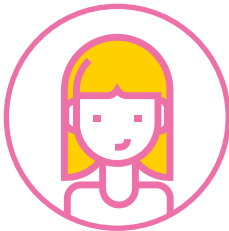
3.- Complete the group work check-list and reflection.

4.- Elaborate the PPT presentation using very little text, relying primarily on images related to each topic on a given slide. You should have 8 slides in total to present.

PRESENTATION GUIDELINE	
SLIDE 1	Good day class! We are group N° ____ . My name is _____ and my classmates are: _____
SLIDE 2	This is our Power Point presentation about "Installation and exploitation of productive software applications".
SLIDE 3	There are many types of servers in the world of LANs. The most common are: _____, _____, _____ .
SLIDE 4	Businesses around the world need Information Technologies to administrate their business. Here are two examples: _____ _____.
SLIDE 5	The needs of the different companies have created intranets and extranets. Here are some examples to explain how they function: _____.
SLIDE 6	Productive software applications need powerful servers. These servers need Operating Systems in order to provide the required services as we mentioned at the beginning of this presentation. They are different from desktop or client OP. (Contrast): _____.
SLIDE 7	For your business you will need to buy and install a server and a Server Operating System. Here are the most common examples: _____ _____.
SLIDE 8	All group members say: Goodbye and thank you for your attention!

Follow up	With the help of the specialty teacher, students can upload their presentations to a web server using the HTTP protocol. "Installation and exploitation of productive software applications" webinar. Due to the format of the presentation, students can present their work online to other students of the same specialty, from different parts of the country.
Variation	Depending on the level of proficiency and internet access, students can research further information about Server Operating Systems. Besides presenting just the names of the systems, students could add advantages and disadvantages, or other characteristics. Also, students can research more about different servers, intranet and extranet, and IT systems, providing examples from their own findings instead of using the examples provided in each lesson.
Rubric	Group work check-list and reflection. (Students) Rubric to assess the productive software digital presentation (Teacher). Pages 86 and 87 from this booklet.

Unit IV: Setting and starting up of applications in local area networks



Goals: Use their knowledge of English in the comprehension and production of short and clear oral and written texts with the purpose of building a personal critical view in contexts related to setting and starting up of applications in local area networks.

Skills: Listening, Reading, Speaking, and Writing.

Project: "Setting and starting up of applications in local area networks board game"

★ 16 KEY WORDS

ACL (n.)	Lead (v.)	VLAN (n.)
BSI (n.)	NAT (n.)	WAN (n.)
CENELEC (n.)	Reassign (v.)	
Degree (n.)	Standard (adj.), (n.)	
Develop (v.)	Tester (n.)	
Execute (v.)	Threat (n.)	
ISO (n.)	TIA (n.)	



Lesson 1: Listening Comprehension

BEFORE YOU LISTEN

A. A Local Area Network is a LAN. According to your knowledge, circle the places where you think you could find a LAN.



A	Mechanical Tool Box
B	Networking Tool Box
C	Arts and Crafts Tool Box
D	Carpenter Tool box



B. Odd one out. Look at the pictures and circle the object that you wouldn't find in a Networking tool box.



1. COAX CONNECTOR



2. NEEDLE



3. PLIERS



4. RJ 45 CONNECTOR



5. EZ CRIMPING TOOL



6. FLASH LIGHT



7. NETWORK CABLE
TESTER







8. PHONE BATTERY

WHILE YOU LISTEN

Click here to listen 



C. You will listen to a person talking about his networking toolbox. Number the pictures of the tools as they appear in the audio.

			
A. Cable Ties	B. Wire Snipper	C. RJ 45 Boots	D. Voltage Tester
			
E. Patch Cable	F. Small Scissors	G. Cable Clips	H. Digital Stud Finder

D. Listen to the recording again and fill-in the gaps with the corresponding words from the box below.

**cat five - data installations - wiring - electrical - coax - ez - boots
velcro straps - Rj45 - foot - network toolbox - cable installations**



Hi guys! I'm Mike and welcome back to "Ultimate Tech Hub". On today's episode I want to show you what you should put in your _____. This is my network toolbox and this is exactly what I use for _____, _____, low voltage _____, and even some _____ work.

This is the _____ cable hip kit. I have a link at the top right showing you how to use this tool. These are _____ connectors, the _____ connectors. These are the _____ for the connectors. These are plungers for a network cable box bracket and there is a link at the top right showing you how to use those.

Okay inside the left compartment we have some _____, some cable ties and some double-sided sticky tape. Okay in the right side compartments we have various sizes of patch cables. These are one _____ to two foot linked and some are _____ and some are cat six.

Recording Source: Ultimate Tech Hub. (2020, April 12). *NETWORKING TOOL BOX KIT - Required Tools for Network Cable Installers & Network Engineers!* [Video].

YouTube. https://www.youtube.com/watch?v=lcFJ_Xz6VfE

AFTER YOU LISTEN

E. Create a poster of your own tool box and label each tool.



Lesson II: Reading Comprehension

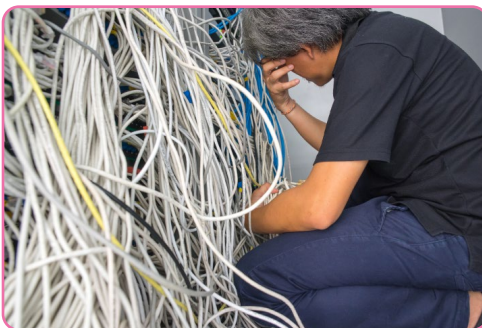
Some commercial environments require network certifications. Certification testing is performed with professional network testers by certified installers. This is a way for installers to ensure that the cables that are going into a network meet the standard international requirements.

Adapted from: *Network Testing* (n.d.). CableWholesale.

https://www.cablewholesale.com/support/technical_articles/network_testing.php

BEFORE YOU READ

A. Look at the picture and underline the problem that best describes it.



Problem 1:	He can't detect if there is a problem with the cable connections.
Problem 2:	He just failed the network test certification. The cables don't meet the standard international requirements.
Problem 3:	He doesn't understand the cable connection and problems. He needs a technician.

B. Match the problems from the previous activity with their appropriate solutions in the box below, by writing the corresponding problem number in the blank space next to its solution.



SOLUTION:

Problem		Call a technician to troubleshoot the operating network.
Problem		Use a Network Verification Cable Tester.
Problem		Fix the connections and test the network again to verify that they meet the standard international requirements.

WHILE YOU READ



C. Read the following text carefully and complete the activities that follow.

Cabling Standards - What You Need to Know

Within the cabling industry, there are four main standard bodies who are all responsible for developing industry protocols. These standards specify the differing levels of performance required for different components, such as cables, connectors, installation, field testing, and administration. Having these globally recognized standards ensures that the systems perform at their required level, allowing customers to compare competing products, knowing that a baseline quality has been maintained throughout. Although there are many crossovers, each cabling body specializes in a different area. The main bodies include the TIA, ISO, CENELEC and BSI. The TIA is generally adhered to by North American technicians, whereas ISO, and CENELEC are used more so in the global market.

Adapted from: **Network Cable Testers (n.d.). Flukenetworks.**

<https://www.flukenetworks.com/expertise/learn-about/cable-testing>

CCNA Certification

Cisco CCNA Certification demonstrates competence as a Network Professional. Cisco Certified Network Associate (CCNA) certification validates your ability to install, configure, operate, and troubleshoot routed & switched networks. CCNA certified professionals can make connections to remote sites via a wide area network (WAN), mitigate basic network security threats, and understand fundamental networking concepts and terminology.

CCNA certification is Cisco's most popular certification, and one of the tech industry's most desired career credentials. Becoming CCNA certified is a distinctive first step toward a rewarding career as a network administrator or engineer. There are numerous Cisco training programs and specialized college degrees featuring coursework in Cisco networking.

Skills Measured by the CCNA Certification

Key knowledge areas and skill sets covered by the Cisco CCNA certification exam include the following. Cisco Certified Network Associates can:

- Understand how different network topologies interact to form a secure IT network.
- Explain how a computer network works and how it interacts with networked devices.
- Configure, verify and troubleshoot a switch with VLAN & interswitch communications.
- Implement an IP addressing plan and IP Services to meet specific network requirements.
- Configure, verify, and troubleshoot routing and router operations on current Cisco devices.
- Identify network security threats and describe threat mitigation methods & countermeasures.
- Describe and perform the appropriate tasks for wireless local area network (WLAN) administration.
- Setup and verify WAN links and execute the proper methods for connecting to a wide area network.
- Implement & support Network Address Translation (NAT) and Access Control Lists (ACLs) in branch office networks.

Adapted from: CCNA Certification (n.d.). ITCareerFinder.

<https://www.itcareerfinder.com/it-certifications/cisco-certifications/ccna-certification.html>

D. Read the text and quiz your partner's understanding with the following questions.

STUDENT A:	
1.	What are the four main standards bodies who are all responsible for developing industry protocols?
2.	What validates the Cisco Certified Network Associate (CCNA) certification?
STUDENT B:	
3.	What can a CCNA certified professional do?
4.	Name 2 Key knowledge areas and skill sets covered by the Cisco CCNA certification exam:



AFTER YOU READ

E. Group game! Slap the word!

PROCEDURE

- Get into groups of 5 classmates to play the game.
- Write the following words from the reading on paper cards.

**Troubleshoot – Connector – Field – TIA – Standards – Qualification
ISO – Tool – CCMNA – Wire – WAN – Network – Topology – Support
Switch – Technology – Installation – NAT**

- Put all the cards on a table facing up, so that all the players can look at them. One assigned player calls out a word, and the rest must slap the matching card as quickly as they can. The first player who slaps the correct word wins the card.

- (Variation: You can play the same game on the class whiteboard instead of a table, and slap the words on it. Write the words randomly wherever you want.)



Lesson III: Speaking

WARM UP

A. Wi-fi. Do you think these names and passwords are appropriate for a Wi-fi router signal? Mark YES or NO.

WI-FI NAMES		YES	NO
1.	LAN654WIFI_SPOT		
2.	Calle Arturo Prat 6555		
3.	Cafeteria123.		

WI-FI PASSWORDS		YES	NO
1.	123456789		
2.	7S3wifitorres!46ssWA		
3.	housewif		

INPUT

B. Look at the following dialogue about router configuration.

SITUATION

A client just bought a new router. He calls a connectivity and networking company to get help from a technician to configure the device to his home LAN.

Client: Hello! My name is John. I just bought a new router and I would like help with the configuration of my home LAN. The router is already connected but I need to name it and change the password.

Technician: Router configuration can be difficult. However, reassigning your router Wi-fi signal's name or password can be very easy. Let's start there.

Client: Oh Really, I didn't know that. Well, I think that selecting a name is not really important. A strong password is.

Technician: You may think that, but on the contrary, it is really important.

Client: Really?! Maybe I need some advice.

Technician: First, don't give away any personal information. Your router may be readily identifiable, but it makes it very susceptible to targeted attacks.

Client: Wow! Interesting. I've heard that it is important to use a password longer than 12 characters. Short passwords don't protect you against attacks.

Technician: Exactly! Letting unknown people access to your router signal could lead to many problems, for example, slowing down your connection, infect your computer with malware, unknown people can access your personal bank information or your connection could be related to illegal action, for example, piracy.

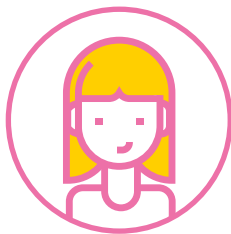
Client: That is really good advice thank you for letting me know.

Technician: No problem! That's my job!

CONTROLLED PRACTICE

C. Pair work. Follow the example from the dialogue in activity B and practice providing advice to your clients. In the box below there are more pieces of advice for you to practice.

For example:

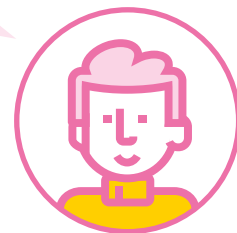


Use a password longer than 12 characters: Short passwords don't protect you against attacks.

Really?! Maybe I need some advice.

Don't give away any personal information: Your router may be readily identifiable, but it makes it very susceptible to targeted attacks.

That is really good advice. Thank you for letting me know!



Topic	Advice	Explanation
Wi-fi name	Don't use the same name for multiple networks.	This could lead to one network being overutilized and other networks being underutilized.
Wi-fi name	Don't pretend to be a public hotspot.	People will try to connect to your router in search of free internet access. Your router must respond to each such connection attempt, and it won't have as much processing power left for the requests.
Wi-fi Password	Don't share your password.	It leads to security problems.
Wi-fi Password	Use a combination of letters, symbols, and numbers.	Simple words just don't suffice because hackers need just a few minutes to try countless words and word combinations.

FREER PRACTICE

- D.** Record a short video providing advice and explanations to set up a router. Share your video to make people aware of the problems they may encounter if they don't configure their router properly. Follow the structure:



Introduction	Say the title of the video: "DOs and DON'Ts when setting up your router" Introduce the team members: I am _____ , this is _____ , this is _____ , and this is _____ .
Main part	Provide advice and an explanation: <i>Don't give away any personal information. Your router may be readily identifiable, but it makes it very easy to execute targeted attacks.</i> (Add as many as you want or research for more ideas)
Closing	Thank your audience: Thanks for watching our video, goodbye!

WRAP UP

- E. Create a post-it collaboration board with your class. Write down the pieces of advice you created for your video on post-it notes and leave them on a large collaboration board. You can do it online in the following website: <http://note.ly/>



Lesson IV: Writing

PRE WRITING

- A. Read at the following information about "an IP addressing plan." You will use this information in the following activities.

What is an IP addressing plan?

An IP addressing plan is a document usually developed by network/design engineers to show how the IP addresses will be distributed among the network devices, based on the network architecture or topology in a way that supports the required services.

What are the benefits?

- The plan will determine the number of IP addresses required both immediately and in the long term, to deliver the specified services to your customers.
- It will also be used by your network engineers to maintain reachability between the different network segments.
- It will ease future network expansion and modification.

Information you should have:

- List of the intended services.
- Number of devices on your network.
- Number of Networks/sites (local or distributed/remote).
- Statistics about users on the network (concurrent users).
- Any available network topology diagram or architecture.
- Any expected service growth/development plans.

Adapted from: *How to develop an IPv4 Addressing Plan?* (2018, March 25). Afrinic.

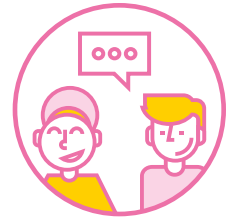
<https://afrinic.net/support/general-queries/how-to-develop-ipv4-addressing-plan>

DRAFTING

B. Use the following structure to write an email to a client indicating that he or she needs to pay a network engineer to elaborate an IP addressing plan for his or her network. Use the information from activity A.

To:	torresadministration@contacto.cl
From:	Emiliogutierrez@net.cl
Greeting	Dear Mr / Ms. Torres
Body	<p>My name is Emilio, the network technician. I'm writing to you to let you know that you will need to pay a network engineer to elaborate an IP addressing plan. An IP addressing plan is _____ (what is an IP addressing plan?) _____.</p> <p>The benefits of having an IP addressing plan are _____ (benefits) _____.</p> <p>If you agree to this request, please send the following information: (Information you should have)</p>
Closing	Best regards, Emilio

REVISING



C. Pair work. Use the following chart to revise your drafting. Make note of the aspects that may need improvement in the observation column.

Component	Completed	Not yet	Observations
To – From information			
Greeting			
The email contains the definition of an IP addressing plan.			
The email contains at least one benefit of having an IP addressing plan.			
The email contains the information requirements.			
Closing			

EDITING

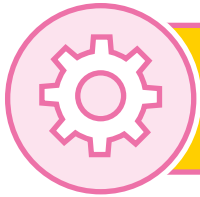


D. Using the following template, rewrite the email taking your partner's feedback into consideration.

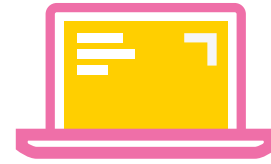
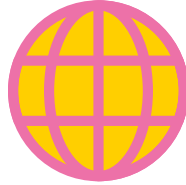
A screenshot of a web-based email composition interface. At the top, it says "New message". Below that is a navigation bar with back, forward, and search icons. The main area has two input fields: "To" and "Subject". At the bottom, there is a rich text editor toolbar with icons for text color, bold, italic, link, image, emoji, and search, followed by a blue "Send" button.

PUBLISHING

E. Now email your teacher with your final version of the message.



Project: "Setting and starting up of applications in local area networks Board Game"



Name of the Project	" Setting and starting up of applications in local area networks Board Game"
Level	Elementary to Intermediate
Time	90 min
General aim	Create a board game
Language aim	Students will practice all four skills with an emphasis on the productive skills (speaking, and writing).
Resources / Materials	Cardboard, colored paper, scissors, 1 die, and markers.
Teacher's role	Facilitator. The teacher will revise the unit activities with the students in order to reinforce the vocabulary and knowledge needed to elaborate the final project.
Students' roles	<p>Team member and contributor. Students should participate in group discussions, create manual procedures, collect materials, and do the research needed to finish the project using the information and knowledge developed during the lessons from unit 4.</p> <p>Roles:</p> <ul style="list-style-type: none">- Group leader: This student coordinates discussions, manual work, and represents the group.- Time keeper: This student is in charge of monitoring work time during the class.- Designer: This student will assist the group helping to very creatively design the game board and cards, and listening to the opinions of the team members.- Researcher: This student helps the groups by looking for the answers of content questions that may arise, consulting the internet, this booklet, or the teacher.

SITUATION

To be a successful professional you need to have solid knowledge about your area. This doesn't mean that learning should be boring. In this project, you have the opportunity to elaborate a board game to play with your classmates and consolidate the new knowledge learned from this unit.

PROCEDURE

- 1.- Form a group of 4 to 5 classmates.
- 2.- Use the piece of cardboard to design your game board (you may use the board design attached to the appendix.)
- 3.- Give your board game with a creative name: For example: "The Network Dungeon"
- 4.- Divide the cardboard into 4 areas of 4 different colors. One for each lesson topic of this unit: Networking Toolbox, Network standards, Router configuration, and IP Addressing Plan.
- 5.- Create at least 5 questions related to each topic-color combination. For example: Is a phone battery part of a networking tool box? What are the important standard bodies?
- 6.- For the free spaces, create at least 4 challenges related to vocabulary, for example: Name 2 glossary words that start with D, or name 2 words related to cables.
- 7.- Use the following presentation guideline to prepare the presentation of your board game. Complete the outline, divide the presentation among the group members, practice the delivery, and finally present it to the class.
- 8.- Exchange your board game with that of another group, and play their game!

Presentation guideline

Hello my name is _____. These are my group members: _____, _____, _____, and _____.

The name of our board game is: _____.

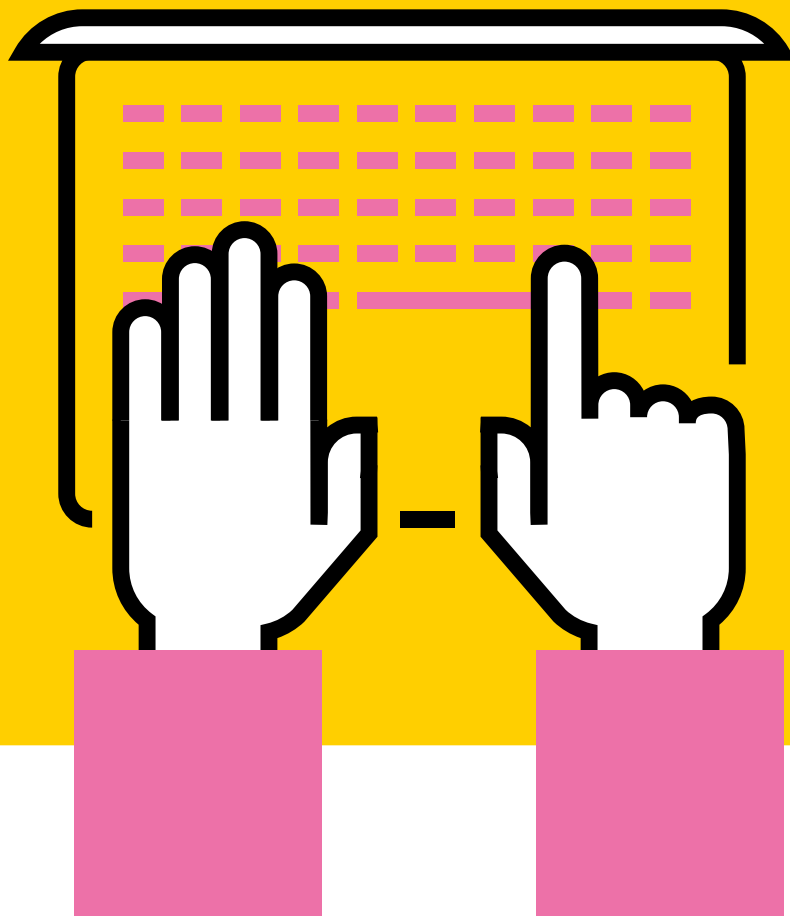
You can play it with 5 players. The aim of the game is to: _____ (answer the question to reach the end of the board).

Our board game is fun because: _____ (the questions are easy to answer).

Thanks for your attention. Goodbye!

Follow up	Students can create a board game fest and invite students from 4to Medio who have already gone through this module and practice with them.
Variation	Depending on the level of proficiency and internet access, students can design a more elaborated board where they can include more challenges, a story related to the board game or even include role playing questions.
Rubric	Group work check-list and reflection. (Students) Rubric to assess the board game and the oral presentation. (Teacher) Pages 88 and 89 from this booklet.

Appendix



ANSWER KEYS UNIT I:

LESSON I

Activity A:

1. House
3. Gamer Room
5. Cyber café

Activity B - C:

B) LAN basis and components.

Activity D:

1. Protocols /YES
2. Network Equipment/ YES
3. NIC / YES
4. Hosts /YES
5. Network Media / NO
6. Router / YES
7. Network Printer / NO
8. Software / YES
9. Smartphone / NO

Activity E:

Student A

1. False
2. True
3. True

Student B

1. True
2. False
3. True

Activity F:

Students' own answers.

LESSON II

Activity A:

Students' own answers.

Activity B:

Students' own answers.

Activity C:

- Protocol
- Layers
- Data
- Rules
- Process
- Component
- Computer
- Tasks
- Receiver
- Sender

Activity D:

OSI Model:

- It is a logical and conceptual model.
- It consists of 7 layers.
- Layers 4 through 7 deal with how application software can relate to the network through application programming interfaces.

TCP / IP Model:

- It stands for Transmission Control Protocol/ Internet Protocol.
- It lets a device reliably send a packet to another device on the same network or on a different network.
- It's always used for one-to-one communications.

Activity E:

- Students' own answers.

LESSON III

Activity A:

1. E
2. D
3. A
4. B
5. C

Activity B:

Students' own answers.

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

Activity F:

Students' own answers.

LESSON IV

Activity A:

Peer to Peer: All the computers in a computer network are connected with every other computer in the network. Every computer in the network uses the same resources as the other computers.

Client - Server: A central computer acts as a hub and serves all the requests from client computers.

Activity B:

Peer to Peer Architecture Advantages

1. B
- 2.D
- Disadvantages
3. E
4. H
- Real Life Example
5. I

Client Server Advantages

1. A
2. C
- Disadvantages
3. F
4. G
- Real Life Example
5. J

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

ANSWER KEYS UNIT II:

LESSON I

Activity A:

1. HARD DRIVE / YES
2. MOTHERBOARD / YES
3. USB PLUG / NO
4. POWER SUPPLY / YES
5. SD CARD / NO
6. EXPANSION SLOTS / YES
7. FAN / YES

Activity B - C:

Alternative: A

Activity D:

(00:06 – 00:36) Let's take a look inside and learn about the various **components** that make a computer work. Whether it's a desktop computer or a **laptop**, every computer has a large circuit board called a **motherboard**. This contains some of the most important parts of the computer such as the **CPU**, also known as the Central Processing Unit, or processor. The CPU can be considered the **brain** of the computer because it processes information and carries out **commands**.

(01:02 – 01:20) The **hard drive** provides long term storage keeping all of the computers **data** even when it's turned off. Many hard drives use a **magnetic platter** to store data, but many newer computers have solid state drives which are faster and more durable but also more expensive.
Computer Basics: Inside a computer. (n.d.). GCFGlobal. <https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/>

Activity E:

Student A

1. True
2. True
3. False

Student B

4. True
5. True
6. False

Activity F:

Students' own answers.

LESSON II

Activity A:

- Google Docs
- Gmail
- WhatsApp
- Google Chrome

Activity B:

Students' own answers.

Activity C:

1. D
2. B
3. C
4. E
5. A

Activity D:

1. A
2. B
3. D
4. C

Activity E:

- Students' own answers.

LESSON III

Activity A:

E-C-A-B-D

Activity B:

Students' own answers.

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

Activity F:

Students' own answers.

Activity G:

Students' own answers.

LESSON IV

Activity A:

Students' own answers.

Activity B:

Students' own answers.

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

ANSWER KEYS UNIT III:

LESSON I

Activity A:

1. CLIENT
2. SERVER
3. MAIL
4. FILE
5. ADDRESS
6. APPLICATION

Activity B - C:

Alternatives: 1, 2, and 3

Activity D:

1. C
2. D
3. A
4. B

LESSON II

Activity A:

1. A
2. A
3. A, B, and C.

Activity B:

Alternative A

Activity C:

Students' own answers.

Activity D:

1. C
2. A
3. B

Activity E:

Students' own answers.

LESSON III

Activity A:

Students' own answers.

Activity B:

Students' own answers.

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

LESSON IV

Activity A:

Students' own answers.

Activity B:

Students' own answers.

Activity C:

Students' own answers.

Activity D:

Students' own answers.

Activity E:

Students' own answers.

ANSWER KEYS UNIT IV:

LESSON I

Activity A:

B

Activity B:

2,4

Activity C:

- A. 7
- B. 5
- C. 2
- D. 4
- E. 8
- F. 6
- G. 3
- H. 1

Activity D:

(00:00 – 00:18) Hi guys! I'm Mike and welcome back to "Ultimate Tech Hub". On today's episode I want to show you what you should put in your network toolbox. This is my network toolbox and this is exactly what I use for data installations, cable installations, low voltage wiring, and even some electrical work.

(00: 54 – 01:18) This is the coax cable hip kit. I have a link at the top right showing you how to use this tool. These are rj45 connectors, the EZ connectors. These are the boots for the connectors. These are plungers for a network cable box bracket and there is a link at the top right showing you how to use those.

(01:50 – 02:15) Okay inside the left compartment we have some velcro straps, some cable ties and some double-sided sticky tape. Okay in the right side compartments we have various sizes of patch cables. These are one foot to two foot linked and some are cat five and some are cat six.

Activity E:

Students' own answers.

LESSON II

Activity A:

All the descriptions are related to the picture.

Activity B:

3-1-2

Activity C:

Students' own answers

Activity D:

Student A

1. The four main bodies are TIA, ISO, CENELEC, and BSI.
2. The CCNA certification validates your ability to install, configure, operate and troubleshoot routed & switched networks.

Student B

3. CCNA certified professionals can make connections to remote sites via a wide area network (WAN), mitigate basic network security threats, and understand fundamental networking concepts and terminology.
4. -Implement an IP addressing plan and IP Services to meet specific network requirements.
-Configure, verify and troubleshoot routing and router operations on current Cisco devices.

Activity E:

Students' own answers

LESSON III

Activity A:

WIFI NAMES:

1. YES
2. NO
3. NO

WIFI PASSWORDS:

1. NO
2. YES
3. NO

Activity B:

Students' own answers

Activity C:

Students' own answers

Activity D:

Students' own answers

Activity E:

Students' own answers

LESSON IV

Activity A:

Students' own answers

Activity B:

Students' own answers

Activity C:

Students' own answers

Activity D:

Students' own answers

Activity E:

Students' own answers

RUBRICS

UNIT I: INSTALLATION OF WIRED AND WIRELESS LOCAL AREA NETWORKS PROJECT: "OUR LAN LAYOUT"				
TEAM MEMBERS :				DATE:
CRITERIA	EXCELLENT 4 PTS	GOOD 3 PTS	POOR 2 PTS	NEEDS TO IMPROVE 1 PT
Content	The layout model contains the information required: LAN location, network topology, network architecture: (advantages, disadvantages, real life example), network media, and network equipment.	The layout model contains most of the information required.	Some of the information required is presented.	The information required is biased and deficient.
Organization	The distribution of the components on the model corresponds to the content elements.	Most of the distribution of the components on the model corresponds to the content elements.	Some of the distribution of the components on the model corresponds to the content elements.	The components present on the model are not related to the elements presented in the content.
Format / Appearance	All of the components are correctly labeled.	Most of the components are correctly labeled.	Only some of the components are correctly labeled.	The components are not correctly labeled.
Oral presentation	The speech follows the structure given using a clear voice, rhythm, and tone. The oral presentation is pronounced clearly and correctly.	Most of the speech follows the structure given and it is well presented using a clear voice, rhythm and tone. Most of the oral presentation is pronounced clearly and correctly.	Some of the speech follows the structure given and it is poorly presented. Only some parts of the oral presentation are pronounced clearly and correctly.	The presentation is unclear and difficult to follow.
Total Score				___ / 16

GROUP WORK CHECK-LIST AND REFLECTION
UNIT I: INSTALLATION OF WIRED AND WIRELESS LOCAL AREA NETWORKS
PROJECT: "OUR LAN LAYOUT"

CRITERIA	YES	NO
We have gone through group discussions in order to plan and organize our cardboard model.		
We used trustworthy sources to enrich our project.		
The component setup on the model is coherent with the information required.		
Our model tags are well written and coherent with the information required.		
We have practiced our presentation several times before presenting the model in front of the class.		

What did you like the most about the project?

What was the most difficult aspect of the project?

Regarding to team work and your individual performance, what changes would you make when creating another project?

**UNIT II: ASSEMBLY AND CONFIGURATION OF COMPUTERS
AND PORTABLE TERMINAL EQUIPMENT**

PROJECT: "VIDEO TUTORIAL TO PREPARE A DEVICE TO MAKE IT PART ON A LAN"

TEAM MEMBERS :				DATE:
CRITERIA	EXCELLENT 4 PTS	GOOD 3 PTS	POOR 2 PTS	NEEDS TO IMPROVE 1 PT
Oral Introduction	Students greet their audience in a friendly way. They introduce themselves, their video, and channel.	Most of the introduction elements required are presented in the oral introduction video using a clear pronunciation, voice rhythm and intonation.	Some of the introduction elements required are presented in the oral introduction video using a clear pronunciation, voice rhythm and intonation.	The oral introduction lacks the elements required or are not present at all.
Oral main content presentation	Students mention the devices they are going to connect and their components. They mention 5 steps they took to install the OP. They name 3 steps to connect the devices to a LAN using a clear pronunciation, voice rhythm, and intonation.	Students mention most of the main content elements required using a clear pronunciation, voice rhythm and intonation.	Students mention some of the main content elements required using a clear pronunciation, voice rhythm and intonation.	Students presentation lacks the elements of the main content required in the video having difficulties using a clear pronunciation, voice rhythm and intonation.
Oral closing	Students end the video saying at least 1 recommendation and using closing prompts using a clear pronunciation, voice rhythm and intonation.	Students close the video mentioning most of the elements required in the closing of the video using a clear pronunciation, voice rhythm and intonation.	Students close the video mentioning some of the elements required in the closing of the video having some problems using a clear pronunciation, voice rhythm and intonation.	Student's presentation lacks the elements required in the closing of the video and have difficulties using a clear pronunciation, voice rhythm and intonation.

Format / Appearance	The video and the audio are clear, without noise interruptions or other distractions.	The video and the audio are mostly clear, with some noise interruptions or other distractions.	Sometimes the video and the audio are not clear, with several noise interruptions or other distractions.	The video presents problems and it is not possible to watch it or understand it.
Team work	Students participate in the discussions, do research and manual procedures to finish the project during the class.	Students participate in most of the discussions, do research, and manual procedures to finish the project during the class.	Students participate in some of the discussions, research, manual procedures to finish the project during the class.	The students do not engage in the preparation of the project.
Total Score:				

GROUP WORK CHECK-LIST AND REFLECTION UNIT II: ASSEMBLY AND CONFIGURATION OF COMPUTERS AND PORTABLE TERMINAL EQUIPMENT PROJECT: "VIDEO TUTORIAL TO PREPARE A DEVICE TO MAKE IT PART ON A LAN"		
CRITERIA	YES	NO
We went through group discussions in order to plan and organize our video project.		
We have used trustworthy sources to enrich our project.		
The structure of our script is similar to the one designed in lesson IV.		
We mentioned the information required in our video.		
We have practiced several times our part before recording our video.		
<p>What did you like the most about the project?</p> <p>What was the most difficult aspect of the project?</p> <p>Regarding to team work and your individual performance, what changes would you make when creating another project?</p>		

**UNIT III: INSTALLATION AND EXPLOITATION OF PRODUCTIVE APPLICATION SOFTWARE
PROJECT: "PRODUCTIVE SOFTWARE DIGITAL PRESENTATION"**

TEAM MEMBERS :

DATE:

CRITERIA	EXCELLENT 4 PTS	GOOD 3 PTS	POOR 2 PTS	NEEDS TO IMPROVE 1 PT
Oral Introduction	Students greet their audience in a friendly way, introduce themselves and the title of their presentation using a clear pronunciation, voice rhythm and intonation.	Most of the introduction elements required are presented in the oral introduction presentation using a clear pronunciation, voice rhythm and intonation.	Some of the introduction elements required are presented in the oral introduction presentation using a clear pronunciation, voice rhythm and intonation.	The oral introduction lacks the elements required or are not present at all.
Oral main content presentation	Students mention examples of: Common servers, Distributed IT systems, intranet and extranet, contrast client - server OP, different server OP using a clear pronunciation, voice rhythm and intonation.	Students mention most of the main content elements required using a clear pronunciation, voice rhythm and intonation.	Students mention some of the main content elements required using a clear pronunciation, voice rhythm and intonation.	Students presentation lacks the main elements of required content in the presentation, having difficulties using a clear pronunciation, voice rhythm and intonation.
Oral closing	Students finish the presentation using closing prompts with clear pronunciation, voice rhythm and intonation.	Students finish the presentation mentioning most of the elements required in the closing using a clear pronunciation, voice rhythm and intonation.	Students finish the presentation mentioning some of the elements required in the closing of the presentation having some problems using a clear pronunciation, voice rhythm and intonation.	Student's presentation lacks the required elements and the student has difficulties using a clear pronunciation, voice rhythm and intonation.

Format / Appearance	The presentation is visually clear and it is presented in a compatible format for visualizing using appropriate audio to listen to the group members.	Most of the presentation is clear to see and it is presented in a compatible format for visualizing using appropriate audio to listen to the group members.	Some of the presentation is clear to see and it is presented in a compatible format for visualizing using appropriate audio to listen to the group members.	The presentation presents problems to be seen.
Team work	Students participate in the discussions, research, and software procedures to finish the project during the class.	Students participate in most of the discussions, research, and software procedures to finish the project during the class.	Students participate in some of the discussions, research, and software procedures to finish the project during the class.	The students do not engage in the preparation of the project.
Total Score:				

GROUP WORK CHECK-LIST AND REFLECTION		
UNIT III: INSTALLATION AND EXPLOITATION OF PRODUCTIVE APPLICATION SOFTWARE		
PROJECT: "PRODUCTIVE SOFTWARE DIGITAL PRESENTATION"		
CRITERIA	YES	NO
We have carried out group discussions in order to plan and organize the presentation of the project.	<input type="checkbox"/>	<input type="checkbox"/>
We used trustworthy sources to enrich our project.	<input type="checkbox"/>	<input type="checkbox"/>
We have followed the presentation guidelines.	<input type="checkbox"/>	<input type="checkbox"/>
Our presentation included the required information.	<input type="checkbox"/>	<input type="checkbox"/>
We have practiced our parts several times before presenting.	<input type="checkbox"/>	<input type="checkbox"/>
<p>What did you like the most about the project?</p> <p>What was the most difficult aspect of the project?</p> <p>Regarding teamwork and your individual performance, what changes would you make when creating another project?</p>		

**UNIT IV: " SETTING AND STARTING UP OF APPLICATIONS IN LOCAL AREA NETWORKS"
PROJECT: " SETTING AND STARTING UP OF APPLICATIONS
IN LOCAL AREA NETWORKS BOARD GAME"**

TEAM MEMBERS :

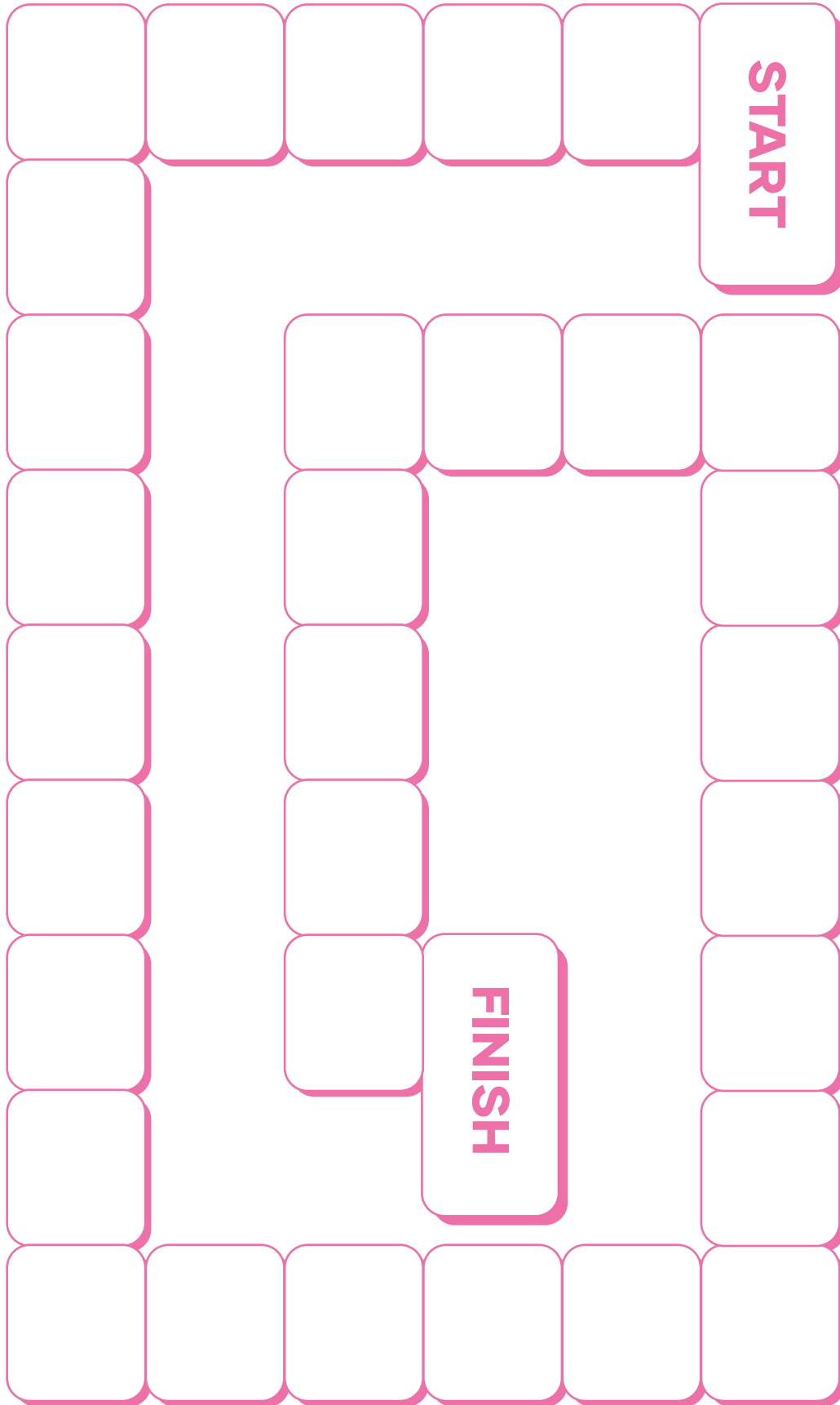
DATE:

CRITERIA	EXCELLENT 4 PTS	GOOD 3 PTS	POOR 2 PTS	NEEDS TO IMPROVE 1 PT
Board Design	The design is creative and coherent with a board game. The group uses the decorative materials to facilitate the use of the board game.	Most of the design is creative and coherent with a board game. The group uses the decoration materials to facilitate most of the use of the board game.	Some parts of the design are creative and coherent with a board game. The group uses the decoration materials to facilitate some of the use of the board game.	The design is not coherent with a board game. The group doesn't use the decoration material to facilitate the use of the board game.
Questions and Challenges	The questions and challenges are fully related to the topics and vocabulary of unit IV: Networking Toolbox, Network standards, Router configuration, and IP Addressing Plan.	Most of the questions are related to the topics and vocabulary of unit IV.	Some of the questions are related to the topics and vocabulary of unit IV.	Very few questions are related to the topics and vocabulary of unit IV.
Oral Presentation	Students present the board game using a clear pronunciation, voice rhythm, and intonation.	Most of the board game presentation is delivered using a clear pronunciation, voice rhythm, and intonation.	Some parts of the board game presentation are delivered using a clear pronunciation, voice rhythm, and intonation.	The students have difficulties with the board game presentation, lacking a clear pronunciation, voice rhythm, and intonation.
Written elements	The written elements of the board game are presented using correct spelling and grammar.	Most of the written elements of the board game are presented using correct spelling and grammar.	Some of the written elements of the board game are presented using correct spelling and grammar.	The written elements of the board game present numerous spelling and grammatical mistakes.

Team work	Students participate in all of the discussions, do research, and manual procedures to finish the project during the class.	Students participate in most of the discussions, do research, and manual procedures to finish the project during the class.	Students participate in some of the discussions, do research, and manual procedures to finish the project during the class.	The students do not engage in the preparation of the project.
Total Score:				

GROUP WORK CHECK-LIST AND REFLECTION UNIT IV: " SETTING AND STARTING UP OF APPLICATIONS IN LOCAL AREA NETWORKS" PROJECT: " SETTING AND STARTING UP OF APPLICATIONS IN LOCAL AREA NETWORKS BOARD GAME"		
CRITERIA	YES	NO
We have carried out group discussions in order to plan and design our board game.		
We used trustworthy sources to enrich our project.		
We have followed the presentation guidelines.		
Our board game includes the required information.		
We have practiced our parts several times before presenting.		
<p>What did you like the most about the project?</p> <p>What was the most difficult aspect of the project?</p> <p>Regarding teamwork and your individual performance, what changes would you make when creating another project?</p>		

BOARD DESIGN UNIT IV: PROJECT



SCRIPTS

UNIT I: Lesson I

A local area network or a LAN is a computer network that connects different devices, so they can exchange information. First, you need hosts. Hosts are devices that can send or receive data, for example computers and servers. Usually, you can find two or more hosts on a LAN. We differentiate these hosts with their unique IP addresses. Each user device needs a network interface card known as NIC. This card transforms data into electronic signals which travel across the network. Each device with a NIC has its own MAC address. So why do devices and networks need addresses? Devices need them so they can talk to each other and recognize each other. A MAC address is a unique number just like your telephone number. Next, you need proper network equipment devices that duplicate, repeat, or split the signal from our hosts. In wire networks, those are called switches, routers, and hubs. Hubs and switches are commonly used to connect segments of a land while routers typically connect different LANs together. These devices are very practical, let's say for home networks, but in large enterprises it is better to divide the work. You also need a proper medium for packets to travel from one device to another. Wired networks need cable. The most common cable you can use is called UTP or unshielded twisted-pair. The name already tells you that the cable consists of unshielded wires twisted around each other. It is used extensively in LANs because of its simplicity and low cost. But for larger distances, fiber-optic cables are a better option. Cables physically end with adapters. The most common ones used in LANs are called RJ45. Usually, they look similar to an old-fashioned telephone plug. Every network device needs software to transform packets of data into segments and put their data into a structure called a packet. The destination computer receives a packet and interprets it into a meaningful information. Last, but not least, protocols.. Protocols are sets of rules that govern how data is transmitted over a LAN. The most common protocols used in a local network are IP, TCP, UDP, ARP, and DHCP.

UNIT II: Lesson I

You may already know that there are many important parts inside a computer, but what exactly do they do? Let's take a look inside and learn about the various components that make a computer work. Whether it's a desktop computer or a laptop, every computer has a large circuit board called a motherboard. This contains some of the most important parts of the computer such as the CPU, also known as the Central Processing Unit, or processor. The CPU can be considered the brain of the computer because it processes information and carries out commands. Since it tends to get hot it's covered by a piece of metal called a heat sink which draws heat away from the processor.

The motherboard also contains the computer's RAM or Random-Access Memory. This is the short-term memory that the computer uses whenever it's performing calculations. However, you cannot store your files there because the RAM is cleared when you shut off the computer. The hard drive provides long term storage keeping all of the computers data even when it's turned off. Many hard drives use a magnetic platter to store data, but many newer computers have solid state drives which are faster and more durable, but also more expensive. On many desktop computers, the motherboard has expansion slots that allow you to upgrade by adding expansion cards. You can add a video card to get better graphics performance or you can add a wireless card to connect to your wireless home network. Most laptops, however, don't have expansion slots.

Of course, the computer's components need electricity to run. The power supply unit is designed to take power from the wall outlet and send it to all of the different components that need power. Laptops also contain a built-in battery that lets you use them anywhere. A computer is a pretty complex machine, but now that you've seen what goes on inside, it should be a little less mysterious.

Computer Basics: Inside a computer (n.d.). GCFGlobal.

<https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/>

Unit III: Lesson I

What is a server?

A server is a computer or system that provides resources, data, services, or programs to other computers, known as clients, over a network. In theory, whenever computers share resources with client machines, they are considered servers. There are many types of servers, including web servers, mail servers, and virtual servers.

A server may be designed to do a single task, such as a mail server, which accepts and stores email and then provides it to a requesting client. Servers may also perform several tasks, such as a file and print server, which both stores files and accepts print jobs from clients, and then sends them on to a network-attached printer.

How do servers work?

To function as a server, a device must be configured to listen to requests from clients on a network connection. This functionality can exist as part of the operating system as an installed application, role, or a combination of the two. For example, **Microsoft's Windows Server operating system** provides the functionality to listen to and respond to client requests. There are many types of servers that all perform different functions. Many networks contain one or more of the common server types:

Types of servers

Here we will mention the most common servers; however, there are more.

DNS servers

Domain Name System servers (DNS) are application servers that provide name resolution to client computers by converting names easily understood by humans into machine-readable IP addresses.

Web servers (WEB)

One of the most abundant types of servers in today's market is a web server. A web server is a special kind of application server that hosts programs and data requested by users across the Internet or an intranet.

Mail servers

Mail servers (MAIL) are a very common type of application server. Mail servers receive emails sent to a user and store them until requested by a client on behalf of said user.

File server

File Transfer Protocol Servers (FTP) store and distribute files. Multiple clients or users may share files stored on a server. In addition, centrally storing files offers easier backup or fault tolerance solutions than attempting to provide security and integrity for files on every device in an organization.

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Unit IV: Lesson I

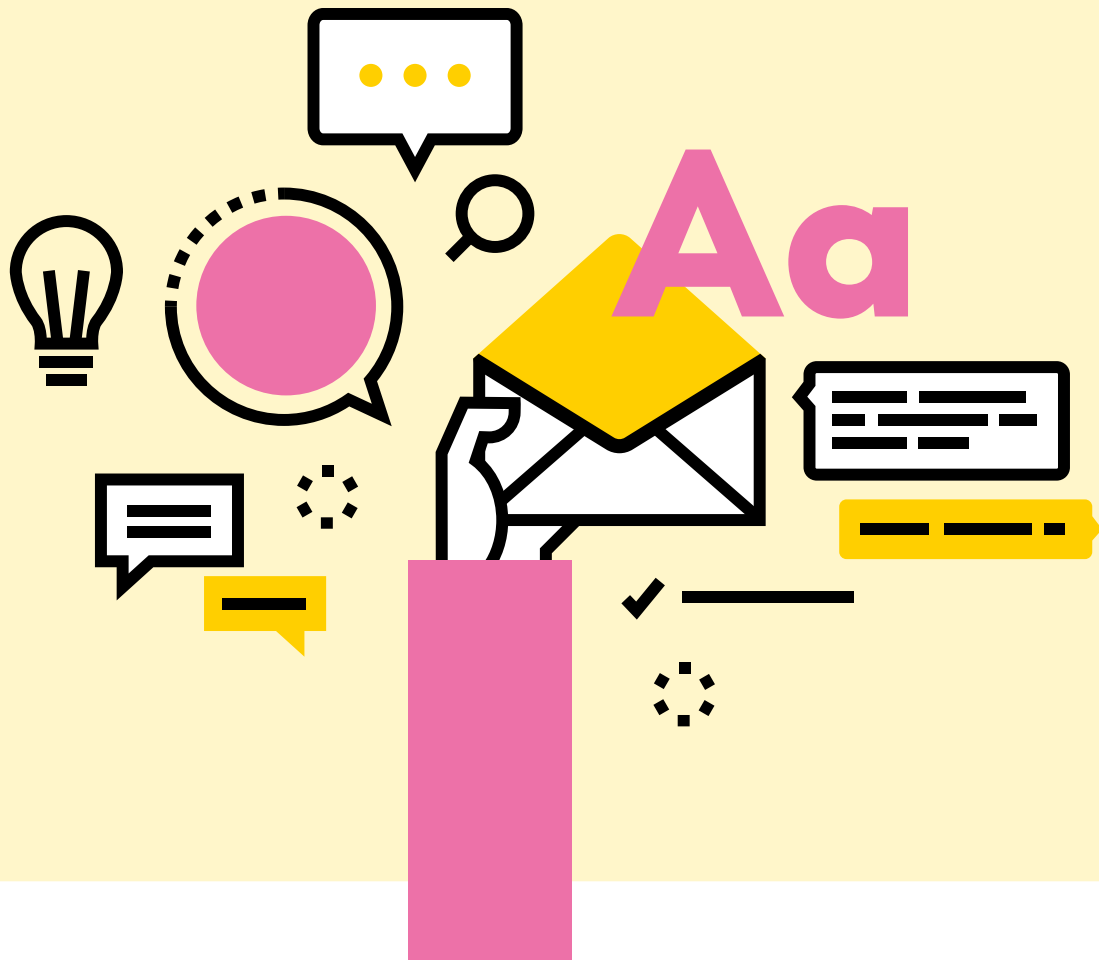
NETWORKING TOOL BOX KIT - Required Tools for Network Cable Installers & Network Engineers!

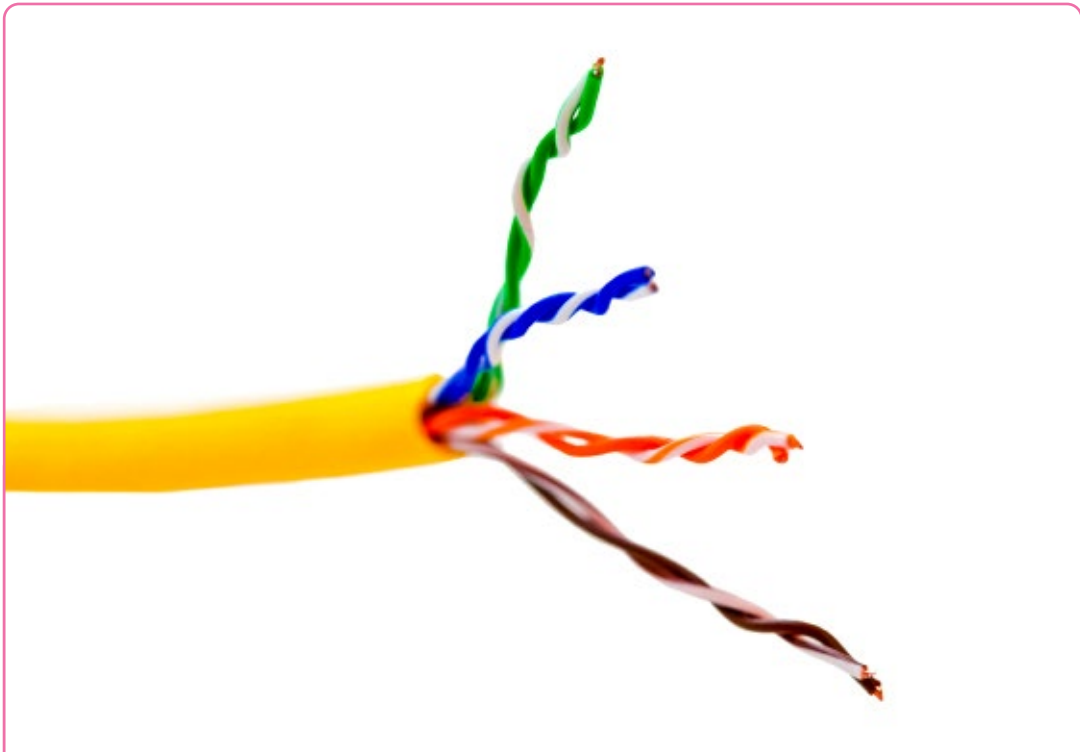
Hi guys! I'm Mike and welcome back to "Ultimate Tech Hub". On today's episode, i want to show you what you should put in your network toolbox. This is my network toolbox and this is exactly what I use for data installations, cable installations, low voltage wiring, and even some electrical work. The most important tool for a cable installer is a cable tester. This is the **VDV Scout Pro 2**. I have a link at the top here and it goes over the testing unboxing in the review. You also need a **Stud Finder**, preferably one that tests for wood plumbing and electrical. You also need a **small flashlight**. This is the **EZ Crimping** tool to make patch cables. There's a link at the top right to show you how to use the crimping tool, and a punch down tool. This is the coax cable hip kit. I have a link at the top right showing you how to use this tool. These are rj45 connectors, the EZ connectors. These are the boots for the connectors. These are plungers for a network cable box bracket and there is a link at the top right showing you how to use those. These are cable clips and these are various coax connectors and make sure to hit subscribe. It's really important to keep this channel going, thanks. This is a multi-tool it's a Phillips head and a flathead with various sizes. A voltage tester, wire snipper, pliers, small measuring tape, wire stripper, and small scissors.

Okay, inside the left compartment we have some velcro straps, some cable ties, and some double-sided sticky tape. Okay, in the right side compartments we have various sizes of patch cables. These are one foot to two foot linked and some are cat five and some are cat six. Okay let's go ahead and look underneath the toolbox, another compartment with other tools and supplies. These are supplies and tools that I don't use a lot, but it's really good to have these just in case. Here's some more velcro straps and some more cable ties, different sizes. Another crimping tool just in case someone loses theirs, i have an extra one. Speaker wire. It looks like some **cat 5e cable and pre-cut 10-foot cat 6 cables**, a bunch of those, looks like 10 or 12 of them. Some extra coax cable, another wire snipper, scissors, hammer, and a larger measuring tape. Well guys this is everything you should have in your **network cable box**. And remember, if you're liking these videos give a thumbs up and share. If you love it, hit subscribe; it's free! Thanks again for watching.

Ultimate Tech Hub. (2020, April 12). NETWORKING TOOL BOX KIT - *Required Tools for Network Cable Installers & Network Engineers!* [Video]. YouTube. https://www.youtube.com/watch?v=lcFJ_Xz6VfE

Flashcards





UTP WIRE



NIC



ROUTER



SWITCH



SERVER



PATCH CABLE



NETWORK CERTIFICATION TESTER



LAN CABLING



FIREWALL HARDWARE



COAXIAL SPLITTER

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