

W1	Learning Area	Computer Systems Servicing	Grade Level	10
	Quarter	Fourth	Date	

I. LESSON TITLE	Network operating systems (NOS) features
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	Set up user access - TLE_IACSS9-12SUCS-IIIa-e-37
III. CONTENT/CORE CONTENT	Create user folder in accordance with Network operating system features.

IV. LEARNING PHASES AND LEARNING ACTIVITIES

I. Introduction (Time Frame: 15 minutes)

In the previous lesson, you have learned that **Remote Desktop** is a program or an operating system feature that allows a user to connect to a computer in another location, see that computer's desktop and interact with it as if it were local. People use remote desktop access capabilities to do a variety of things. For your computer and other devices to be connected to one another, it needs to be connected to a network. Based on the picture below, list down the devices that can relate to one another.



1. _____
2. _____
3. _____

To learn further, this lesson was designed for you to:

- a. define a network operating system.
- b. identify the types of network operating systems and the common features of network operating system.
- c. give the importance of the network operating systems.

D. Development (Time Frame: 1 hour and 15 minutes)

Network Operating System (NOS)

A network operating system (NOS) is a computer operating system (OS) that is designed primarily to support workstations, personal computers and, in some instances, older terminals that are connected on a local area network (LAN). The software behind a NOS allows multiple devices within a network to communicate and share resources with each other.

The composition of hardware that typically uses a NOS includes a number of personal computers, a printer, a server and file server with a local network that connects them together. The role of the NOS is to then provide basic network services and features that support multiple input requests simultaneously in a multiuser environment.

Due to earlier versions of basic operating systems not being designed for network use, network operating systems emerged as a solution for single-user computers.

Types of network operating systems

There are two basic types of network operating systems, the peer-to-peer NOS and the client/server NOS:

1. Peer-to-peer network operating systems allow users to share network resources saved in a common, accessible network location. In this architecture, all devices are treated equally in terms of functionality. Peer-to-peer usually works best for small to medium LANs and is cheaper to set up.
2. Client/server network operating systems provide users with access to resources through a server. In this architecture, all functions and applications are unified under one file server that can be used to execute individual client actions regardless of physical location. Client/server tends to be most expensive to implement and requires a large amount of technical maintenance. An advantage to the client/server model is that the network is controlled centrally, makes changes or additions to technology easier to incorporate.

Common features of network operating systems

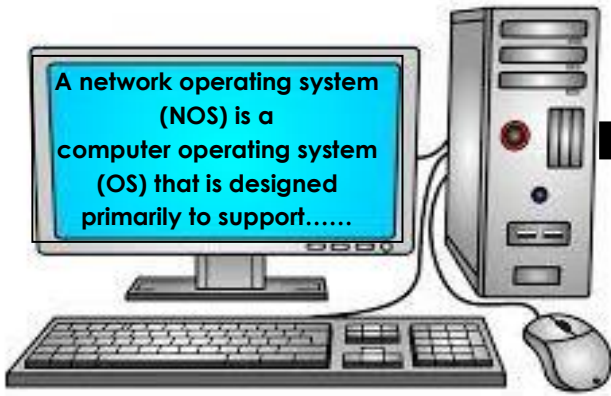
Features of network operating systems are typically associated with user administration, system maintenance and resource management functionality. This includes:

1. Basic support for operating systems like protocol and processor support, hardware detection and multiprocessing.
2. Printer and application sharing
3. Common file system and database sharing
4. Network security capabilities such as user authentication and access control
5. Directory
6. Backup and web services

7. Internetworking

Learning Task 1. You Complete Me!

Complete the concept below by writing down the correct words to define a Network Operating System.



1. _____
2. _____
3. _____

Learning Task 2. Fact or Bluff!

Tell whether each statement is a **Fact** or **Bluff** about the information about the types of NOS. Write your answer on the provided before each number.

- _____ 1. Peer-to-peer network operating systems allow users to share network resources saved in a common, accessible network location.
- _____ 2. Peer-to-peer usually works best for small to medium LANs and is cheaper to set up.
- _____ 3. Client/server network operating systems provide users with access to resources through a server.
- _____ 4. Client/server tends to be most expensive to implement and requires a large amount of technical maintenance.
- _____ 5. An advantage of the peer-to-peer network is that the network is controlled centrally, makes changes or additions to technology easier to incorporate.

Learning Task 3. Fill Me Out!

Let us help Sir Compy to fill out the boxes with the common features of network operating systems.



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

E. Engagement (Time Frame: 1 hour and 30 minutes)

I am creative!

Now that it is difficult to do different tasks because of this pandemic, and information is just one click away from your browser, your task is to search for the advantages and disadvantages of peer-to-peer network operating systems and Client/server network operating systems. Organize the information that you will get by making a **comic strip** on a short bond paper. Do not forget also to write down the reference by copying the URL. Your output will be graded based on the given rubric below.

CATEGORY	4	3	2	1
Clarity and Neatness	Comic Strip is easy to read and all elements are clearly written and drawn.	Comic Strip is easy to read and most elements are clearly written and drawn.	Comic Strip is somewhat easy to read and some elements are clearly written and drawn.	Comic Strip is hard to read and few elements are clearly written and drawn.
Spelling & Grammar	No spelling or grammatical mistakes in a comic strip with at least thirty lines of text.	No spelling or grammatical mistakes in a comic strip with at least twenty-five lines of text.	One to three spelling or grammatical errors in the comic strip and at least twenty lines of text.	More than four spelling and/or grammatical errors in the comic strip and/or less than twenty lines of text.
Required Elements	Comic Strip includes all required elements as well as a few additional elements.	Comic Strip includes all required elements and one additional element.	Comic Strip includes all required elements.	One or more required elements is missing from the comic strip.

A. Assimilation (Time Frame: 20 minutes)

A network operating system (NOS) is a computer operating system (OS) that is designed primarily to support workstations, personal computers and, in some instances, older terminals that are connected on a local area network (LAN). There are two basic types of network operating systems, the peer-to-peer NOS and the client/server NOS: Peer-to-peer network operating systems allow users to share network resources saved in a common, accessible network location while client/server network operating systems provide users with access to resources through a server. There are also features of network operating systems are typically associated with user administration, system maintenance and resource management functionality and these are; Basic support for operating systems like protocol and processor support, hardware detection and multiprocessing; Printer and application sharing; Common file system and database sharing; Network security capabilities such as user authentication and access control; Directory; Backup and web services and Internetworking.

V. ASSESSMENT (Time Frame: 20 minutes)

I. Directions: Identify what is being asked in the following statements. Write your answer on the space provided before each number.

- _____ 1. This is a computer operating system (OS) that is designed primarily to support workstations, personal computers.
- _____ 2. These allow users to share network resources saved in a common, accessible network location.
- _____ 3. These provide users with access to resources through a server.
- _____ 4. This usually works best for small to medium LANs and is cheaper to set up.
- _____ 5. This tends to be most expensive to implement and requires a large amount of technical maintenance.

II. Directions. List down what is being asked below.

Common features of network operating systems

6. _____
7. _____
8. _____
9. _____
10. _____

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

- ☐ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.
- I was able to do/perform the task. It was quite challenging, but it still helped me in understanding the target content/lesson.
- ? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

VII. REFERENCES

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https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcTbzzZWhHRJlb2GUAF6z7iXz9f9Yc_wQtgCA&usqp=CAU

<https://www.cisco.com/c/dam/assets/swa/img/anchor-info/wat-is-lan-1-628x353.png>

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W2	Learning Area	Computer Systems Servicing	Grade Level	10
	Quarter	Fourth	Date	
I. LESSON TITLE		Network policies and services		
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Set up user access - TLE_IACSS9-12SUCS-IIIa-e-37		
III. CONTENT/CORE CONTENT		Establish network access policies/end user requirements		
IV. LEARNING PHASES AND LEARNING ACTIVITIES				
I. Introduction (Time Frame: 15 minutes)				
<p>In the previous lesson, you have learned that network operating system (NOS) is a computer operating system (OS) that is designed primarily to support workstations, personal computers and, in some instances, older terminals that are connected on a local area network (LAN). This NOS comprises of two basic types of network operating systems, the peer-to-peer NOS and the client/server NOS: Peer-to-peer network operating systems allow users to share network resources saved in a common, accessible network location while client/server network operating systems provide users with access to resources through a server. Aside from these, you need must learn that there are also restrictions / limitations in networking, and this will be discussed through the lesson on network policies.</p> <p>To learn further, this lesson was designed for you to;</p> <ol style="list-style-type: none">define a network policy.explain the four categories of properties of a network.give the benefits of a network policy.				
D. Development (Time Frame: 1 hour and 15 minutes)				
<p>Read and understand the lesson below and answer the learning tasks that follow.</p> <p>Network Policies</p> <p>Network policies are sets of conditions, constraints, and settings that allow you to designate who is authorized to connect to the network and the circumstances under which they can or cannot connect. When processing connection requests as a Remote Authentication Dial-In User Service (RADIUS) server, NPS performs both authentication and authorization for the connection request.</p> <p>Network Policies - An Ordered Set of Rules</p> <p>Network policies can be viewed as rules. Each rule has a set of conditions and settings. NPS compares the conditions of the rule to the properties of connection requests. If a match occurs between the rule and the connection request, the settings defined in the rule are applied to the connection.</p> <p>When multiple network policies are configured in NPS, they are an ordered set of rules. NPS checks each connection request against the first rule in the list, then the second, and so on, until a match is found.</p> <p>Each network policy has a Policy State setting that allows you to enable or disable the policy. When you disable a network policy, NPS does not evaluate the policy when authorizing connection requests.</p> <p>Network policy properties</p> <p>There are four categories of properties for each network policy:</p> <ol style="list-style-type: none">Overview - These properties allow you to specify whether the policy is enabled, whether the policy grants or denies access, and whether a specific network connection method, or type of network access server (NAS), is required for connection requests.Conditions - These properties allow you to specify the conditions that the connection request must have to match the network policy; if the conditions configured in the policy match the connection request, NPS applies the settings designated in the network policy to the connection.Constraints – These are additional parameters of the network policy that are required to match the connection request. If a constraint is not matched by the connection request, NPS automatically rejects the request. Unlike the NPS response to unmatched conditions in the network policy, if a constraint is not matched, NPS denies the connection request without evaluating additional network policies.Settings - These properties allow you to specify the settings that NPS applies to the connection request if all the network policy conditions for the policy are matched. <p>Benefits of network policy</p> <p>A network that runs on policies can be automated more easily and therefore respond more quickly to changing needs. Many common tasks, such as adding devices and users and inserting new applications and services, can now be easily accomplished. Well-defined policies can benefit a network in the following ways:</p> <ol style="list-style-type: none">Align the network with business needs.Provide consistent services across the entire infrastructure.Bring agility through greater automation.Make performance dependable and verifiable.				

- An even bigger advantage to enterprises is the security gains from policy. By granularly defining policies that give users and devices the least amount of access to resources that they need to do their jobs, you can better protect sensitive data. Violations can be caught and mitigated quickly. Such zero-trust security measures reduce risk, contain threats, stop lateral movement of malware, and help verify regulatory compliance.

Steps for Implementing Policies that Work

- Identify - Figure out who and what is on the network. Users may have brought their own devices, and departments may have plugged in IoT devices without administrator knowledge. Without an inventory of devices, and their security postures (locations, operating systems, latest software patches and updates, etc.), it is difficult to set policies that govern their uses and places in the network.
- Visualize - Understand how users and devices communicate. If you are starting from scratch, you can preplan, but you do not always have that luxury.
- Define - Once you have a solid idea of how your network is being used, you can start to define policies that will permit, deny, or modify those flows.
- Model - After visualizing and defining your policies but before putting them in place, do a "dry run" to determine what effects the policies will have on users, traffic, and performance.
- Activate - Here, you activate network devices to enforce policies as per the functions they perform.
- Extend - Sometimes, activating policies in just one network is not enough. In this age of connectedness, consistent policies must permeate all networks within the enterprise – campus, branch, WAN, and data center, as well as the ecosystem, such as ITSM. Extending policies would make all networks collaborate to fulfill business intent.
- Assure - It is not enough to define, model, and activate policies. You need to help ensure that they are being followed and getting the job done. Here, you analyze the network and evaluate whether it is enforcing the policies and identify any fine-tuning you may need to do.

Learning Task 1. You Complete Me!

Complete the concept below by writing down the correct words to define Network Policies.

(1) _____ are sets of conditions, constraints, and settings that allow you to designate who is authorized to (2) _____ to the network and the circumstances under which they can or cannot connect. When processing connection (3) _____ as a Remote Authentication (4) _____ User Service (RADIUS) server, NPS performs both (5) _____ and authorization for the connection request.

Network policies can be viewed as (6) _____. Each rule has a set of (7) _____ and (8) _____. NPS compares the conditions of the rule to the (9) _____ of connection requests. If a match occurs between the rule and the connection (10) _____, the settings defined in the rule are applied to the connection.

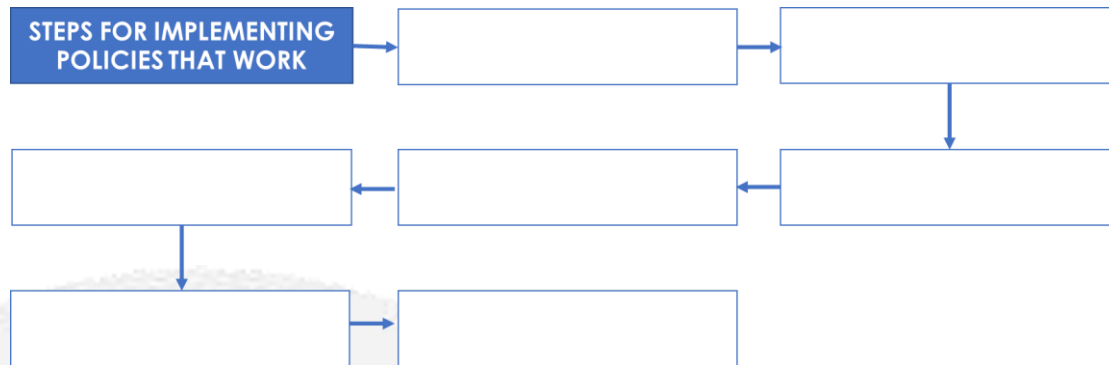
Learning Task 2. Search Me!

Loop words that relate to the network policies. These words can be found vertically, horizontally, upward, downward, and backward. Write these words on the space provided below.

V	Q	E	C	N	A	M	R	O	F	R	E	P	Z	P
S	A	X	O	P	E	C	E	C	S	Q	X	J	L	W
T	U	Y	N	T	D	N	E	T	O	V	G	S	M	V
N	E	S	B	P	E	P	R	W	A	N	U	O	U	L
I	T	G	I	Z	H	Q	U	V	E	V	N	Z	C	T
A	Y	N	A	Q	U	W	G	Z	H	T	I	E	Q	M
R	U	I	X	L	A	T	I	L	M	C	J	T	C	L
T	C	T	S	D	P	L	F	S	W	G	V	H	C	T
S	X	T	A	E	A	C	N	D	Y	B	K	P	E	A
N	D	E	R	U	I	L	O	U	E	C	R	C	X	T
O	Y	S	S	W	J	C	C	V	T	K	O	Q	Y	W
C	G	I	O	P	Z	N	I	S	J	A	W	D	Z	V
P	V	Z	T	D	L	C	W	L	I	B	T	K	F	D
T	Y	C	A	C	V	P	A	P	O	C	E	J	Q	J
C	O	N	D	I	T	I	O	N	L	P	N	I	C	V

Learning Task 3. Give the steps!

Give the steps for implementing policies that work.



E. Engagement (Time Frame: 1 hour and 30 minutes)

Let's do the ACROSTIC!

An acrostic is a poem in which the first letter of each line spells out a word, message, or the alphabet. For this learning task, make an acrostic about concepts related on Network Policies. Use either of these words, NETWORK or POLICY. You will be graded based on the following criteria:

Creativity – 40 %
 Workmanship – 20 %
 Content – 20 %
 Timeliness – 20 %
 Total: - 100 %

A. Assimilation (Time Frame: 20 minutes)

Network policies are sets of conditions, constraints, and settings that allow you to designate who is authorized to connect to the network and the circumstances under which they can or cannot connect. There are four categories of properties for each network policy, **Overview, Conditions, Constraints and Settings**. Well-defined policies can benefit a network in the following ways: Align the network with business needs; Provide consistent services across the entire infrastructure; Bring agility through greater automation; Make performance dependable and verifiable and an even bigger advantage to enterprises is the security gains from policy. There are also **Steps for Implementing Policies that Work**, and these are Identify, Define, Model, Activate, Extend and Assure.

V. ASSESSMENT (Time Frame: 20 minutes)

I. Directions: Identify what is being asked in the following statements. Write your answer on the space provided before each number.

- _____ 1. These are sets of conditions, constraints, and settings that allow you to designate who is authorized to connect to the network and the circumstances under which they can or cannot connect.
- _____ 2. These properties allow you to specify whether the policy is enabled, whether the policy grants or denies access, and whether a specific network connection method, or type of network access server (NAS), is required for connection requests.
- _____ 3. These properties allow you to specify the conditions that the connection request must have to match the network policy; if the conditions configured in the policy match the connection request, NPS applies the settings designated in the network policy to the connection.
- _____ 4. These are additional parameters of the network policy that are required to match the connection request. If a constraint is not matched by the connection request, NPS automatically rejects the request. Unlike the NPS response to unmatched conditions in the network policy, if a constraint is not matched, NPS denies the connection request without evaluating additional network policies.
- _____ 5. These properties allow you to specify the settings that NPS applies to the connection request if all the network policy conditions for the policy are matched.

II. Rearrange the steps for implementing policies that work. Use numbers 1 – 7 in rearranging each step. Write only the number of your choice on the space provided.

- _____ Assure - It is not enough to define, model, and activate policies. You need to help ensure that they are being followed and getting the job done.
- _____ Visualize - Understand how users and devices communicate.
- _____ Activate - Here, you activate network devices to enforce policies as per the functions they perform.
- _____ Extend - Sometimes, activating policies in just one network is not enough. In this age of connectedness, consistent policies must permeate all networks within the enterprise.
- _____ Model - After visualizing and defining your policies but before putting them in place, do a "dry run" to determine what effects the policies will have on users, traffic, and performance.
- _____ Identify - Figure out who and what is on the network.
- _____ Define - Once you have a solid idea of how your network is being used, you can start to define policies that will permit, deny, or modify those flows.

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

- ☐ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.
- I was able to do/perform the task. It was quite challenging, but it still helped me in understanding the target content/lesson.
- ? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

VII. REFERENCES

<https://docs.microsoft.com/en-us/windows-server/networking/technologies/nps/nps-np-overview>
<https://www.cisco.com/c/en/us/solutions/enterprise-networks/what-is-network-policy.html#~faq>

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W3	Learning Area	Computer Systems Servicing	Grade Level	10
	Quarter	Fourth	Date	

I. LESSON TITLE	Configure server function
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II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	Configure network services - TLE_IACSS9-12SUCS-IIIa-e-37
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III. CONTENT/CORE CONTENT	Check normal server function in accordance with manufacturer's instructions
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IV. LEARNING PHASES AND LEARNING ACTIVITIES

I. Introduction (Time Frame: 15 minutes)

You have learned that network policies are sets of conditions, constraints, and settings that allow you to designate who is authorized to connect to the network and the circumstances under which they can or cannot connect. Give at least 2 benefits of network policy.

1. _____
2. _____

Now that you already know about network policies, this lesson will let you;

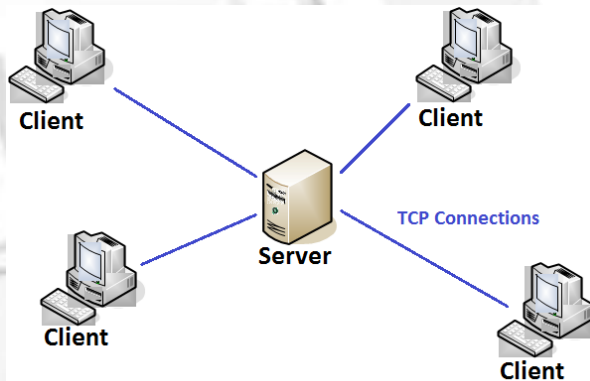
- a. define a server;
- b. explain the types of servers;
- c. discuss the network server setup: installation and configuration.

D. Development (Time Frame: 2 hours)

Read and understand the lesson below and answer the learning tasks that follow.

Server

A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet.



Types of Servers

Servers are often categorized in terms of their purpose. A few examples of the types of servers available are as follows:

1. A web server is a computer program that serves requested HTML pages or files. In this case, a web browser acts as the client.
2. An application server is a program in a computer in a distributed network that provides the business logic for an application program.
3. A proxy server is software that acts as an intermediary between an endpoint device, such as a computer, and another server from which a user or client is requesting a service.
4. A mail server is an application that receives incoming emails from local users -- people within the same domain -- and remote senders and forwards outgoing emails for delivery.
5. A virtual server is a program running on a shared server that is configured in such a way that it seems to each user that they have complete control of a server.
6. A blade server is a server chassis housing multiple thin, modular electronic circuit boards, known as server blades. Each blade is a server, often dedicated to a single application.
7. A file server is a computer responsible for the central storage and management of data files so that other computers on the same network can access them.
8. A policy server is a security component of a policy-based network that provides authorization services and facilitates tracking and control of files.
9. A database server is responsible for hosting one or more databases. Client applications perform database queries that retrieve data from or write data to the database that is hosted on the server.
10. A print server provides users with access to one or more network-attached printers -- or print devices as some server vendors call them. The print server acts as a queue for the print jobs that users submit. Some print servers can prioritize the jobs in the print queue based on the job type or on who submitted the print job.

Network Server Setup: Installation and Configuration

Phase 1: Collecting Information

In the first installation phase, the setup program asks for the preliminary information that it needs to begin the installation. A setup wizard prompts you for the following information:

- Language: Select your language, time-zone, and keyboard type.
- Product Key: Enter the 25-character product key that came with the installation media. If setup says you entered an invalid product key, double-check it carefully. You probably just typed the key incorrectly.
- Operating System Type: The setup program lets you select Windows Server 2008 Standard Edition or Core. Choose Standard Edition to install the full server operating system; choose Core if you want to install the new text-only version.
- License Agreement: The official license agreement is displayed. You have to agree to its terms to proceed.
- Install Type: Choose an Upgrade or Clean Install type.
- Disk Location: Choose the partition in which you want to install Windows.
- Upgrade to NTFS: If you want to upgrade a FAT32 system to NTFS, you will need to say so now.

Phase 2: Installing Windows

In this phase, Windows setup begins the actual process of installing Windows. The following steps are performed in sequence:

- Copying Files: Compressed versions of the installation files are copied to the server computer.
- Expanding Files: The compressed installation files are expanded.
- Installing Features: Windows server features are installed.
- Installing Updates: The setup program checks Microsoft's website and downloads any critical updates to the operating system.
- Completing Installation: When the updates are installed, the setup program reboots so it can complete the installation.

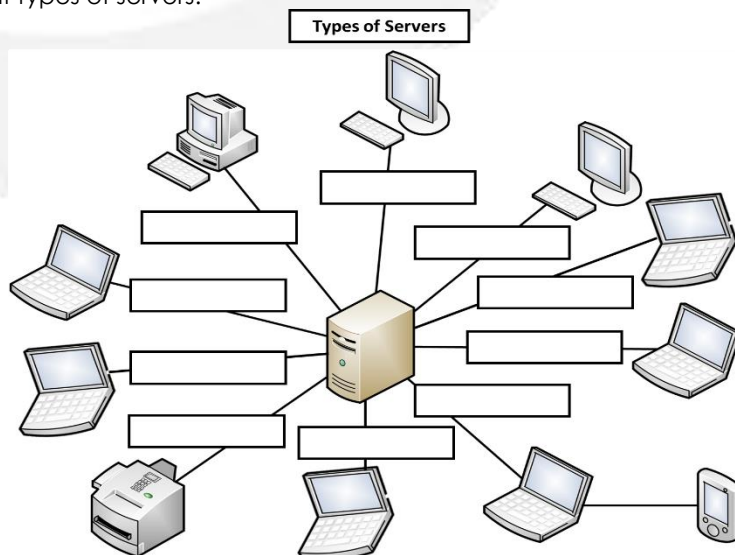
Configuring Your Server

The following list describes the server configuration settings available from this wizard:

- Set the Administrator Password: The very first thing you should do after installing Windows is set a secure administrator password.
- Set the Time Zone: This is necessary only if the indicated time zone is incorrect.
- Configure Networking: The default network settings are usually appropriate, but you can use this option to change the defaults if you wish.
- Provide Computer Name and Domain: This option lets you change the server's computer name and join a domain.
- Enable Automatic Updating: Use this option if you want to let the server automatically check for operating system updates.
- Download and Install Updates: Use this option to check for critical operating system updates.
- Add Roles: This option launches the Add Roles Wizard, which lets you configure important roles for your server.
- Add Features: This option lets you add more operating system features.
- Enable Remote Desktop: Use this option to enable the Remote Desktop feature, which lets you administer this server from another computer.
- Configure Windows Firewall: If you want to use the built-in Windows firewall, this option lets you configure it.

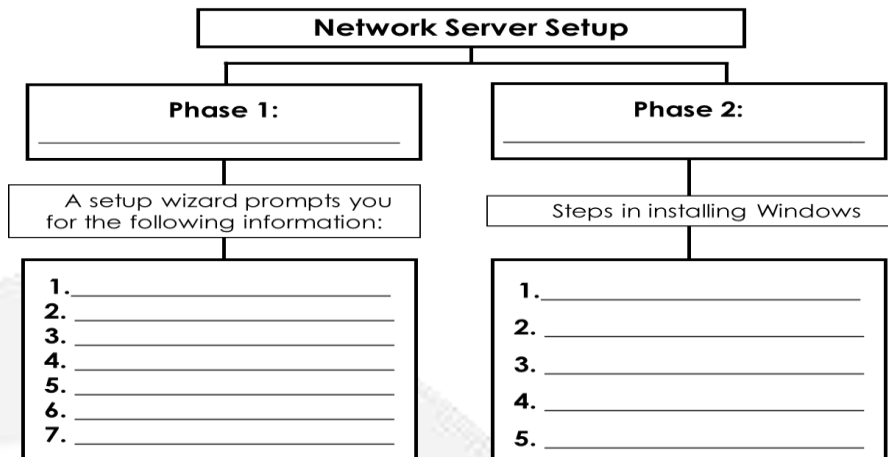
Learning Task 1. List me Down!

List down the different types of servers.



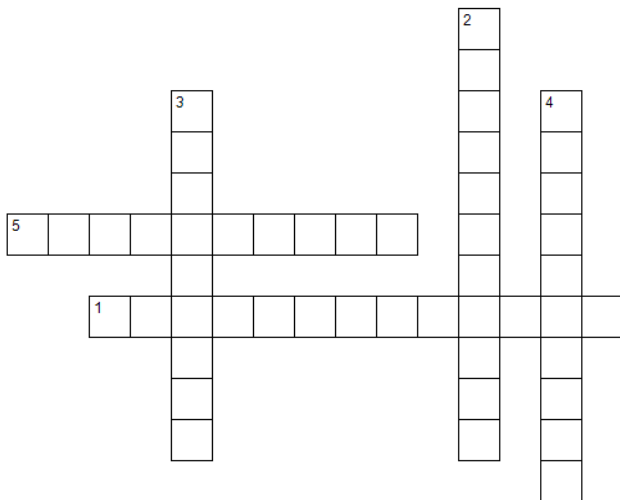
Learning Task 2. Complete Me!

Complete the concept map on the Network Server Setup.



Learning Task 3. Identify Me!

Answer the crossword puzzle below by referring to the description across.



Across:

1. A program running on a shared server that is configured in such a way that it seems to each user that they have complete control of a server.
5. An application that receives incoming emails from local users -- people within the same domain -- and remote senders and forwards outgoing emails for delivery.

Down:

2. Provides users with access to one or more network-attached printers -- or print devices as some server vendors call them.
3. A computer program that serves requested HTML pages or files.
4. A computer responsible for the central storage and management of data files so that other computers on the same network can access

E. Engagement (Time Frame: 1 hour and 30 minutes)

An **infographic** is a collection of imagery, charts, and minimal text that gives an easy-to-understand overview of a topic. In this task, you are going to create an infographic about the lesson you have just learned. If possible, use your mobile device in designing your infographic, if not put your design on a short bond paper. Your output will be graded based from the following criteria.

Creativity – 40 %
 Workmanship – 20 %
 Content – 20 %
 Timeliness – 20 %
 Total: - 100 %

A. Assimilation (Time Frame: 15 minutes)

A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet where there are different types of servers. Servers are often categorized in terms of their purpose. A few examples of the types of servers available are as follows; web server, application server, proxy server, mail server, virtual server, blade server, file server, policy server, database server, and print server.

V. ASSESSMENT (Time Frame: 20 minutes)

Directions: **TRUE or FALSE.** Write **True** if the given statement is correct and **FALSE** if not. Write your answer on the space provided.

- _____ 1. A server is a computer that provides data to other computers. It may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet.
- _____ 2. A web server is a computer program that serves requested HTML pages or files. In this case, a web browser acts as the client.

- _____ 2. A proxy server is a program in a computer in a distributed network that provides the business logic for an application.
- _____ 3. A virtual server is software that acts as an intermediary between an endpoint device, such as a computer, and another server from which a user or client is requesting a service.
- _____ 4. A mail server is an application that receives incoming emails from local users -- people within the same domain --
- _____ 5. A virtual server is a program running on a shared server that is configured in such a way that it seems to each user that they have complete control of a server.
- _____ 6. A blade server is a server chassis housing multiple thin, modular electronic circuit boards, known as server blades.
- _____ 7. A policy server is a security component of a policy-based network that provides authorization services and facilitates tracking and control of files.
- _____ 8. The very first thing you should do after installing Windows is set the time zone.
- _____ 9. The first phase of the Network Server Setup: Installation and Configuration is Collecting Information.
- _____ 10. The first phase of the Network Server Setup: Installation and Configuration is configuring Windows.

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☐ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

- I was able to do/perform the task. It was quite challenging, but it still helped me in understanding the target content/lesson.

? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

VII. REFERENCES

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http://4.bp.blogspot.com/-LTxX8NYeEU/UwK7bRqA0tI/AAAAAAAAAFA/k_IBNf3lxtA/s1600/client+server.png

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W4	Learning Area	Computer Systems Servicing	Grade Level	10
	Quarter	Fourth	Date	
I. LESSON TITLE		Procedures in planning and preparing maintenance and diagnoses of faulty computer and networks systems		
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Maintaining and Repairing Computer Systems and Networks (MRCN) - TLE_IACSS9-12MRCN-IIa-e-40		
III. CONTENT/CORE CONTENT		Plan maintenance and/ or diagnosis of faults in line with job requirements Prepare maintenance and/ or diagnosis of faults in line with job requirements		
IV. LEARNING PHASES AND LEARNING ACTIVITIES				
I. Introduction (Time Frame: 15 minutes)				
<p>You have learned that a server is a computer that provides data to other computers and this may serve data to systems on a local area network (LAN) or a wide area network (WAN) over the Internet. Aside from knowing how computers and other devices can be connected, you must learn how are you going to plan and conduct maintenance. What are the things that you do in order for you to ensure that your computer or devices such as your cellphone can be used for a longer period of time? List down at least 2 practices that you apply.</p> <p>1. _____</p> <p>2. _____</p> <p>Now that you already know how to maintain your own devices, this lesson will let you:</p> <p>a. explain the procedures in planning and conducting maintenance;</p> <p>b. identify the planning maintenance procedures for computer system and networking;</p> <p>c. appreciate the importance of maintenance.</p>				
D. Development (Time Frame: 2 hours)				
<p>Read and understand the lesson below and answer the learning tasks that follow.</p> <p>Procedures in Planning and Conducting Maintenance</p> <p>Preventive maintenance can be described as maintenance of equipment or systems before fault occurs. It can be divided into two subgroups: Planned Maintenance and Conditioned-Based Maintenance. Planned Maintenance (PM) is any variety of scheduled maintenance to an object or item of equipment. Specifically, PM is a scheduled service visit carried out by a competent and suitable agent, to ensure that an item of equipment is operating correctly to avoid any unscheduled breakdown and downtime of an equipment. Condition Based Maintenance (CBM) is a maintenance strategy that uses the actual condition of the asset to decide what maintenance needs to be done.</p> <p>The purpose of systematic inspection, detection and correction of existing / future problems is very important to maintain equipment / facilities in satisfactory condition before it may cause major problem.</p> <p>Maintenance, including tests, measurements, adjustments, and parts replacement, performed specifically to prevent faults from occurring.</p> <p>Maintenance is divided into two (2) general type. Preventive maintenance is given for maintaining equipment and facilities in satisfactory operating condition to extend the life of the equipment. Corrective maintenance is task performed to identify, isolate, and rectify a fault so that the failed equipment or system can be restored to an operational condition within the tolerances or limits.</p> <p>Maintenance Procedures</p> <p>In preparing maintenance procedure, you also have to consider designing a systematic plan for both for hardware and software. This saves time, money and frustration and ensures safe conditions to prevent injury to people and damage to computer equipment.</p> <p>Planning Maintenance Procedures for Computer System and Networking:</p> <p>A. Design a systematic maintenance plan for hardware.</p> <p>1. Design a monitoring, evaluating, and updating plan.</p> <p>Computers have significantly changed the working environment, simplifying, and speeding up many tasks across many work areas. However, with these advances are some potential problems and maintenance issues. These guidelines describe how computer technicians, students and computer users can work together to achieve a productive workplace environment. The guidelines reflect current knowledge and best practice for the use of computers so you can achieve maximum efficiency and safety in your workplace.</p> <p>2. Place your computer in a well-ventilated area.</p> <p>This will allow proper circulation of air inside the computer unit.</p> <p>3. Schedule the use of computer for its longer life.</p> <p>This will help lessen the attacks of viruses and increases the life span of your computer.</p> <p>4. Move the computer only when it is turned off and unplugged.</p> <p>To avoid damage to the computer unit always turn off and unplug it when transferring the computer to another location.</p> <p>5. Treat your computer properly.</p> <p>This means taking care of your computer. PCs and laptops should be properly turned off.</p>				

B. Design a systematic maintenance plan for your software.

1. Backup your files.

Protecting your files means creating backups, storing your file backups on your hard drive or any removable storage device regularly.

2. Install or secure passwords.

Installing passwords makes your files more secure.

3. Delete temporary files.

Deleting the temporary files on your computer will enhance its speed and will create more disk space for your files.

4. Update anti-virus and spyware.

Regularly update your anti-virus for your computer protection against viruses.

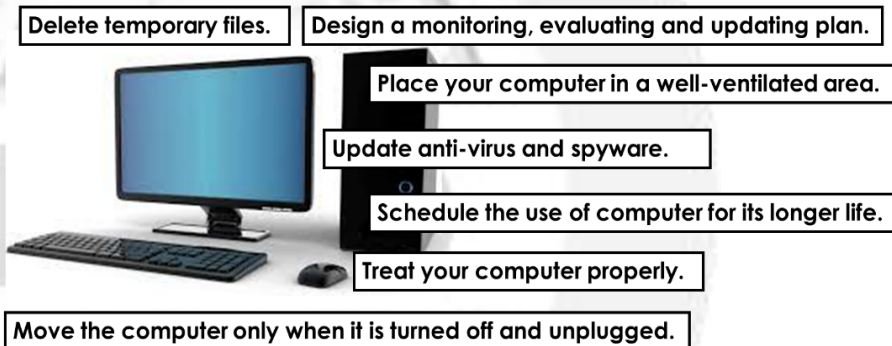
Learning Task 1.

Directions: **Fact or Bluff.** Write **Fact** if a statement is correct, and if otherwise, write **Bluff** on the space provided before each number.

- _____ 1. Planned maintenance is a scheduled service visit carried out by a competent and suitable agent.
- _____ 2. You can do preventive maintenance if there is already a problem on your computer.
- _____ 3. Condition-based maintenance is a maintenance strategy that uses the actual condition of the asset to decide what maintenance needs to be done.
- _____ 4. Corrective maintenance is task performed to identify, isolate, and rectify a fault so that the failed equipment or system.
- _____ 5. When you want your computer stay longer, conduct maintenance.

Learning Task 2. Where am I!

Encircle which among the given statements are the ways to design a systematic maintenance plan for hardware.



Learning Task 3. I am Different!

Based on what you have learned on your readings of the lesson, give a brief description on the maintenance given below.

1. Preventive Maintenance - _____
2. Condition-Based maintenance - _____
3. Planned Maintenance - _____

E. Engagement (Time Frame: 1 hour and 30 minutes)

One of the ways to know what to do to maintain the hardware and software components specifically in networking in a real setting is to conduct an interview. But with the restrictions due to pandemic, this could be possible through a virtual or online interview. Your task is to look for a computer shop owner, computer technician, IT or someone who uses computer and conduct an interview. The interview form is provided for you. Just fill out the form once you conduct the interview. Please be reminded to tell that the information that you will get will be used only for documentation purposes and will serve as your output in your Performance Task.

Name of Person you Interviewed: _____ Date: _____

Questions:

1. How long have you been using computers?

2. What are the things that you do to maintain your hardware components?

3. How about the software components?

4. What advice can you give to beginners in order for them to use their computers for a longer period of time?

A. Assimilation (Time Frame: 15 minutes)

Preventive maintenance is the maintenance of equipment or systems before fault occurs. **Planned Maintenance (PM)** is any variety of scheduled maintenance to an object or item of equipment. **Condition Based Maintenance (CBM)** is a maintenance strategy that uses the actual condition of the asset to decide what maintenance needs to be done. **Corrective maintenance** is task performed to identify, isolate and rectify a fault so that the failed equipment or system can be restored to an operational condition within the tolerances or limits.

There are also ways to design a systematic maintenance plan for hardware and software which can really help to prolong the use of computer and networking.

With the given situation below, what maintenance is appropriate?

1. Kenn is going to do an assignment in his computer but as he pressed the power button, his computer does not turn off. What maintenance does he need to use and why?

2. Kelsey is a very organized person in all her stuffs especially in her computer shop business. She sees to it that her computers are in good condition that is why she has been using it for a longer period. What do you think is her strategy for this situation?

V. ASSESSMENT (Time Frame: 20 minutes)

A. Directions: Identify what is being asked in each statement. Write your answer on the space before each number.

- _____ 1. This is a kind of maintenance of equipment or systems done before fault occurs.
- _____ 2. This is any variety of scheduled maintenance to an object or item of equipment.
- _____ 3. This is a scheduled service visit carried out by a competent and suitable agent, to ensure that an item of equipment is operating correctly to avoid any unscheduled breakdown and downtime of an equipment.
- _____ 4. This is a maintenance strategy that uses the actual condition of the asset to decide what maintenance needs to be done.
- _____ 5. This is task performed to identify, isolate, and rectify a fault so that the failed equipment or system can be restored to an operational condition within the tolerances or limits.

B. Directions. Tell whether the statement is systematic maintenance plan for hardware or for a software. Use the legend below and write your answer on the space provided.

HW - if it tells systematic maintenance plan for hardware.

SW - if it tells systematic maintenance plan for software.

- _____ 6. Place your computer in a well-ventilated area.
- _____ 7. Move the computer only when it is turned off and unplugged.
- _____ 8. Schedule the use of computer for its longer life.
- _____ 9. Install or secure passwords.
- _____ 10. Delete temporary files.

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

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VII. REFERENCES

Computer Hardware Servicing – Grade 10 Learner's Material
First Edition, 2014, pages 191 – 195

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W5	Learning Area	TLE-Computer Systems Servicing	Grade Level	10
	Quarter	4	Date	

I. LESSON TITLE	Materials, Tools and Testing devices, and Equipment related to Computer Systems and Networks.
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	<p>LO 1. Plan and prepare for maintenance and repair</p> <p>TLE_IACSS9-12MRCN-IIa-e-40</p> <p>1.3 Obtain tools, equipment, and testing devices needed for correct operation and safety</p> <p>1.4 Check tools, equipment, and testing devices needed for correct operation and safety</p> <p>1.5 Obtain materials necessary to complete the work in accordance with established procedures and check against job requirements</p> <p>1.6 Follow OHS policies and procedures in line with job requirements</p>
III. CONTENT/CORE CONTENT	<ul style="list-style-type: none"> Tools and tests equipment OHS policies and procedures

IV. LEARNING PHASES AND LEARNING ACTIVITIES												
<p>I. Introduction (Time Frame: 20 minutes)</p> <p>In planning and preparing maintenance and repair of computer systems and networks, one must be able to identify the materials, tools and testing devices, and equipment in doing the activity.</p> <p>This Learning Packet will let you explore and learn more about the materials, tools and testing devices, and equipment related to computer systems and networks. This will also provide you information on the safety precautions related to the materials, tools and testing devices, and equipment.</p> <p>Preliminary Activity. NAME IT!</p> <p>Directions. Name at least three materials, tools and testing devices, and equipment related to computer systems and networks. Write your answer on a separate sheet of paper.</p> <table border="1"> <thead> <tr> <th>Materials</th> <th>Tools and Testing Devices</th> <th>Equipment</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>1.</td> <td>1.</td> </tr> <tr> <td>2.</td> <td>2.</td> <td>2.</td> </tr> <tr> <td>3.</td> <td>3.</td> <td>3.</td> </tr> </tbody> </table>	Materials	Tools and Testing Devices	Equipment	1.	1.	1.	2.	2.	2.	3.	3.	3.
Materials	Tools and Testing Devices	Equipment										
1.	1.	1.										
2.	2.	2.										
3.	3.	3.										

IV. LEARNING PHASES AND LEARNING ACTIVITIES






D. Development (Time Frame: 1 hour and 30 minutes)

In planning and preparing for the maintenance of computer systems and functions, determining the correct materials, tools, equipment, and testing devices are important. These materials help you maintain your computer system well. These are classified according to their functions and uses.

For more information about the equipment, tools, and materials' use and functions, click on the link <http://bit.ly/3xZPu17MaterialsInfoSheet> or you may consider watching the video clip on <http://bit.ly/2RJXzX5MaterialsVideo>

LEARNING ACTIVITY 1. NAME AND TELL!

Directions. Name the following materials, tools, equipment, and testing devices related to computer systems and networks. Then, give the functions/use of each item. Write your answers on a separate sheet of paper.

ILLUSTRATION	NAME	FUNCTIONS/USES
<p>1.</p>  <p>https://bit.ly/3hj2DMG</p>		
<p>2.</p>  <p>https://bit.ly/3tCQGnm</p>		
<p>3.</p>  <p>https://bit.ly/3fbdTlo</p>		
<p>4.</p>  <p>https://bit.ly/3vUe0ic</p>		
<p>5.</p>  <p>https://bit.ly/3f7OEXd</p>		

IV. LEARNING PHASES AND LEARNING ACTIVITIES

Equipment and accessories are necessary items for a particular purpose. Tools are any physical item that can be used to achieve a goal, especially if the item is not consumed in the process. Materials are physical substances that things can be made from and usually are consumables.

LEARNING ACTIVITY 2. CLASSIFY ME!

Directions. Classify the following items. Write MT for materials, TT for tools and testing devices and ET for equipment.

<p>1.</p>  <p>https://bit.ly/3tC9pQa</p>	<p>2.</p>  <p>https://bit.ly/33vz0zN</p>	<p>3.</p>  <p>https://bit.ly/33EDX9b</p>
<p>4.</p>  <p>https://bit.ly/2R8wXPr</p>	<p>5.</p>  <p>https://bit.ly/3eBXD41</p>	<p>6.</p>  <p>https://bit.ly/2Sln3o8</p>
<p>7.</p>  <p>https://bit.ly/3f7OEXd</p>	<p>8.</p>  <p>https://bit.ly/3o2LOql</p>	<p>9.</p>  <p>https://bit.ly/3ycN7bk</p>
<p>10.</p>  <p>https://bit.ly/3uBx9Fi</p>		

E. Engagement (Time Frame: 1 hour)

In performing tasks related to computer systems and networks that require the use of any of the tools and testing device, one must take into consideration some of the safety practices in using some of these tools and devices.

LEARNING ACTIVITY 3. LIST IT!

Directions. List at least one (1) safety precautions that needs to be taken into consideration while performing computer-related tasks using the following materials, tools, testing devices and equipment.

MATERIAL/TOOL/TESTING DEVICE/EQUIPMENT	SAFETY PRECAUTION
1. crimping tool	•
2. motherboard manual	•
3. LAN tester	•
4. printer/scanner	•
5. soldering iron	•
6. long nose pliers	•
7. device installer	•
8. wire stripper	•
9 RJ 45	•
10. screwdriver	•

IV. LEARNING PHASES AND LEARNING ACTIVITIES

A. Assimilation (Time Frame: 30 minutes)

To synthesize your learned information based on the given content and relate your learned concepts to your personal life, you will do the next activity

LEARNING ACTIVITY 4. EXIT TICKET

Directions. Answer the Exit Ticket honestly below for you to be able to move on with the last part of this learning activity.

Exit Ticket	
How well did you understand the lesson?	
3 Things I learned today	1. _____ 2. _____ 3. _____
2 Things I found interesting	1. _____ 2. _____
1 Question I still have	1. _____

V. ASSESSMENT (Time Frame: 20 minutes)

(Learning Activity Sheets for Enrichment, Remediation, or Assessment to be given on Weeks 3 and 6)

Directions. Identify the following. Write your answers on a separate sheet of paper.

1. It is used for holding, bending, and stretching the lead of electronics component or connecting wire.
2. It is used to unsolder unwanted parts or component in the circuit with the support of soldering pencil.
3. It is a popular type of cable used in computer networking that consists of two shielded wires twisted around each.
4. It is a piece of hardware that produces a paper copy (also known as 'hardcopy') of the information generated by the computer.
5. is a device that allows a given computer to share data or otherwise a device which let computers exchange information.

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

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Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

VII. REFERENCES

<https://baictchs09.wordpress.com/2018/10/21/materials-tools-equipment-and-testing-devices/>

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W6	Learning Area	TLE-Computer Systems Servicing	Grade Level	10
	Quarter	4	Date	

I. LESSON TITLE	Diagnoses and Identification of Faulty Computer and Network Systems
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	LO 2. Maintain computer systems and networks TLE_IACSS9-12MRCN-Ilf-j-41 2.1 Use appropriate PPE in line with standard procedures 2.2 Check normal function of computer systems and networks in accordance with manufacturer's instructions
III. CONTENT/CORE CONTENT	<ul style="list-style-type: none"> PPE Diagnosis of computer systems and network's function

IV. LEARNING PHASES AND LEARNING ACTIVITIES																				
<p>I. Introduction (Time Frame: 20 minutes)</p> <p>Proper preparation is the key to a successful build. Before you begin, make sure that you have the tool you will need, and secure a clear well-lit workplace. Gather all the components you'll be using and unpack them at the same time. Find a dry, well-ventilated place to do your work, you should choose an area without carpets, because it tends to create static electricity. Always keep in mind that personal protection is one of the traits of a good technician.</p> <p>Preliminary Activity. LIST IT!</p> <p>Directions. List at least five (5) safety precautions that need to be considered when performing maintenance of computers and networks. Write your answers on a separate sheet of paper.</p> <table border="1"> <tr><td>1.</td></tr> <tr><td>2.</td></tr> <tr><td>3.</td></tr> <tr><td>4.</td></tr> <tr><td>5.</td></tr> </table>	1.	2.	3.	4.	5.															
1.																				
2.																				
3.																				
4.																				
5.																				
<p>D. Development (Time Frame: 1 hour and 30 minutes)</p> <p>Computers, in general, are stable, and you can usually rely on them to not fail you. However. If you develop some basic habits, you can postpone serious computer problems, if not avoiding them entirely. To learn more about preventing computer system failure, click the link http://bit.ly/3y2uXc5PreventingFailure</p> <p>LEARNING ACTIVITY 1. GIVE IT TO ME!</p> <p>Directions. Give at least five (5) issues related to preventing computer system failure cited in the information sheet, then give a specific way to solve each issue. Write your answers on a separate sheet of paper.</p> <table border="1"> <thead> <tr> <th>ISSUES</th> <th>SPECIFIC WAYS TO SOLVE THE ISSUE</th> </tr> </thead> <tbody> <tr><td>1.</td><td></td></tr> <tr><td>2.</td><td></td></tr> <tr><td>3.</td><td></td></tr> <tr><td>4.</td><td></td></tr> <tr><td>5.</td><td></td></tr> </tbody> </table> <p>One of the common computer issues users, whether students or teachers, encounter is a slow computer. To know more about the reasons of this and how to fix them, read and understand the information on the link http://bit.ly/3uFhHYZFixSlowComputer .</p> <p>LEARNING ACTIVITY 2. WHAT'S THE DIFFERENCE?</p> <p>Directions. Determine the difference between the items below. Write your answers on a separate sheet of paper.</p> <table border="1"> <tr> <td>BOOT</td> <td>REBOOT</td> </tr> <tr> <td> </td> <td> </td> </tr> </table> <table border="1"> <tr> <td>WARM REBOOT</td> <td>COLD REBOOT</td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	ISSUES	SPECIFIC WAYS TO SOLVE THE ISSUE	1.		2.		3.		4.		5.		BOOT	REBOOT	 	 	WARM REBOOT	COLD REBOOT	 	
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IV. LEARNING PHASES AND LEARNING ACTIVITIES

LEARNING ACTIVITY 3. MATCHY! MATCHY!

Directions. match the reasons why computer run slowly in Column A with its solution in Column B. Write your answers on a separate sheet of paper.

COLUMN A	COLUMN B
<p>____ 1. Not Enough of Free Hard Drive Space</p> <p>____ 2. Too Many Background programs</p> <p>____ 3. Your PC requires a Memory upgrade.</p> <p>____ 4. Old computer</p> <p>____ 5. Hard drive corrupted or fragmented</p> <p>____ 6. Your computer is Infected with a Virus or Malware</p>	<p>A. Add new memory in open slots, if you have them or; Replace the existing memory with new, greater capacity models.</p> <p>B. Buy a new computer – but consult with IT professional about buying a new PC BEFORE heading to the store.</p> <p>C. Try the free or trial versions of antivirus to scan your computer for malware.</p> <p>D. Remember not to arbitrarily shut your computer off from the power source.</p> <p>E. Verify that there is at least 20% of free hard drive space, and increase, when possible.</p> <p>F. Diagnose and repair your hard drive. (Note, do not do it yourself if you are not familiar with the process. Ask a professional IT Tech to assist).</p> <p>G. To see what programs are running in the background and how much memory and CPU they are using open Task Manager.</p>

E. Engagement (Time Frame: 30 minutes)

Networks are networks. Despite best efforts to keep things smooth all the time every day, things happen. Here is a look at some common network issues, some tips for quickly resolving them, and even better, how to prevent them from occurring again. Click the link <http://bit.ly/3okVpcJNetworkProblems>

LEARNING ACTIVITY 4. MATCH IT!

Directions. match the common network problems in Column A with its solution in Column B.

COLUMN A	COLUMN B
<p>____ 1. Outside Wireless Signal Range</p> <p>____ 2. Unplugged Network Cable</p> <p>____ 3. IP Address Conflicts</p> <p>____ 4. Blocked by Your Service Provider</p> <p>____ 5. Website Temporarily Offline</p> <p>____ 6. Computer Glitches</p> <p>____ 7. Computer Firewall Malfunctions</p> <p>____ 8. Wireless Network Configuration</p> <p>____ 9. Network Downtime</p> <p>____ 10. Broadband Router or Access Point Malfunctions</p>	<p>A. Confirm that the Wi-Fi channel number and encryption keys on your router have not recently changed.</p> <p>B. If you have recently installed or upgraded one on your computer, temporarily disable them to determine whether it may be the cause of Internet connection problems.</p> <p>C. Contact your Internet provider to verify whether they are experiencing an outage.</p> <p>D. Check the router's lights and console if possible, to ensure it is running and responding properly.</p> <p>E. Ensure your wired or wireless network hardware is switched on and plugged in.</p> <p>F. Before assuming your Internet, connection is faulty, try visiting several popular Web sites rather than just one.</p> <p>G. Ideally, you should place the router at a height in some central location away from other cordless devices.</p> <p>H. Check the computer and remove any malware that you will find. On Windows computers, try resetting the network connection. Reboot the computer if necessary.</p> <p>I. Contact your ISP if you suspect your account has been blocked.</p> <p>J. Renew your IP address.</p>

A. Assimilation (Time Frame: 1 hour)

Personal Protective Equipment are gadgets, clothing or equipment that protect the workers from illness or injury that can be caused by different hazards/risks.

To recall concepts about PPE, watch the video clip through <http://bit.ly/3fgxKKNPPEVideo>

LEARNING ACTIVITY 5. SAFETY... TOP PRIORITY!

Directions. Identify three (3) PPE appropriate in the conduct of maintenance of computers. Then, give specific ways on how these PPE help in keeping oneself safe.

IV. LEARNING PHASES AND LEARNING ACTIVITIES

NAME OF PPE	SPECIFIC FUNCTION/S OR BENEFIT/S ON THE CONDUCT OF COMPUTER MAINTENANCE
1.	
2.	
3.	

To synthesize your learned information based on the given content and relate your learned concepts to your personal life, you will do the next activity.

LEARNING ACTIVITY 6. I CAN FIX IT!

Directions. Identify three (3) issues/problems you or other members in the family has experienced when using computer or mobile phone and when connecting gadgets to the internet. Then, utilizing the concepts learned from the lessons, give ways on how you can deal those issues when you encounter again.

ISSUES	HOW TO SOLVE/DEAL THE ISSUES
1.	
2.	
3.	

V. ASSESSMENT (Time Frame: 20 minutes)

(Learning Activity Sheets for Enrichment, Remediation, or Assessment to be given on Weeks 3 and 6)

I. MULTIPLE CHOICE

Directions. Answer the following. Write the letter of the correct answer on a separate sheet of paper.

- It is when you turn your computer ON after it was off for a while
 A. Boot B. Reboot C. Warm reboot D. Cold reboot
- Make sure that your antivirus is updated to be able to scan unnecessary files that enter your PC. Do not install programs that you're not familiar with or if do not fully trust. This issue has something to do with _____.
 A. Back up Issues C. Usage Issues
 B. Malware Issues D. Warranty Issues
- It is when you manually navigate to the Restart option from your taskbar.
 A. Boot B. Reboot C. Warm reboot D. Cold reboot
- Know your computer's specifications and its limits. Memory runs even the PC is running idly. It consumes memory storages capacity making you difficult to open a program if memory storage had been consumed. This issue has something to do with _____.
 A. Back up Issues C. RAM Issues
 B. Malware Issues D. Warranty Issues
- It is when you just plain push the Power button until computer turns completely off.
 A. Boot B. Reboot C. Warm reboot D. Cold reboot

II. TRUE OR FALSE

Directions, Write **BRAIN** if the statement is correct and **DRAIN** if it is not. Write your answers on a separate sheet of paper.

- Firewall software running on most computers is intended to prevent unwanted network traffic from disrupting its operation.
- Two computers can have the same IP address.
- Free hard drive space is simply the amount of space on the RAM that can be written to and that is not in use.
- The optimal temperature range of a CPU generally resides between 70 and 90 degrees Celsius in modern processors.
- You can use a vacuum to clean inside of your computer

VI. REFLECTION (Time Frame: 20 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

✓ - I was able to do/perform the task. It was quite challenging, but it still helped me in understanding the target content/lesson.

? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

IV. LEARNING PHASES AND LEARNING ACTIVITIES

VII. REFERENCES

Lujero, Rosalie P. and Ramilo, Ronaldo V., Computer Hardware Servicing –Grade 10, Learner's Material, First Edition, 2013, pages 196-203

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W7	Learning Area	TLE-Computer Systems Servicing	Grade Level	10
	Quarter	4	Date	

I. LESSON TITLE	Computer Maintenance; Hardware Repairs and Replacement
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	LO 2. Maintain computer systems and networks TLE_IACSS9-12MRCN-Ilf-j-41 2.3 Perform scheduled/ periodic maintenance in accordance with manufacturer's requirements 2.4 Repair materials when needed in accordance with established procedures 2.5 Replace materials when needed in accordance with establish procedures
III. CONTENT/CORE CONTENT	<ul style="list-style-type: none"> Maintenance of computer systems and networks Repair or replace faulty system

IV. LEARNING PHASES AND LEARNING ACTIVITIES

I. Introduction (Time Frame: 20 minutes)

Computer maintenance is the practice of keeping computers in a good state of repair. A computer containing accumulated dust and debris may not run properly. Dust and debris will accumulate as a result of air cooling. Any filters used to mitigate this need regular service and changes.

Preliminary Activity.

Directions. Give at least six (6) activities related to computer maintenance.



D. Development (Time Frame: 1 hour)

Computers last five to eight years when maintained properly, but that lifespan can erode quickly if a user doesn't take steps to protect the hardware. This is why computer maintenance is so important.

Computer maintenance means keeping your computers and laptops in good condition through regular cleanings, hard drive updates, and virus prevention. Doing so can lengthen the lifespan of your devices and it can also help you browse the web more safely.

This part will walk you through computer maintenance steps to take daily, weekly, monthly, and quarterly to keep your device up and running. Keep reading for 25 tips to help protect your devices on the link

<http://bit.ly/2Qf20bZComputerMaintenance> .

LEARNING ACTIVITY 1. DO'S and DON'T'S

Directions. Write DO'S if the statement is helpful in maintaining computer and DON'T if it is not.

- Wipe down your keyboard with a damp lint-free cloth, but be sure not to soak it in water.
- If a weird email shows up in your inbox or an unexpected popup while browsing, try to open it.
- You should remove the laptop battery if you won't be using the device for a month or more to help extend its shelf life.
- Cable stations and other cord organizers can help organize your area.
- Cloud storage providers allow you to store gigabytes of space while running down your hard drive memory at the same time.

LEARNING ACTIVITY 2 COMPUTER MAINTENANCE CHART

Directions. Utilizing the concepts from the information sheet and the things you already know, create a computer maintenance chart by identifying activities that should be done daily, weekly, monthly and quarterly. Copy the format of the matrix below on a separate sheet of paper for your answers.

COMPUTER MAINTENANCE CHART			
DAILY	WEEKLY	MONTHLY	QUARTERLY
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.

IV. LEARNING PHASES AND LEARNING ACTIVITIES

E. Engagement (Time Frame: 1 hour and 30 minutes)

Part of the maintenance in the computer system are repairing and replacing the faulty system. Repairing is to fix the problem either in the hardware or software which also includes replacement of a computer that is faulty. It is a good thing that you have learned first how to diagnose the computer system and network, you can be able to fix it easily with the use of the proper tools and equipment.

Some of the hardware repair guidelines are as follows:

- Gather your toolkit.
- Check for power first, before doing anything else.
- Check the external connections of the computer.
- Perform the Power-On Self-Test (POST)
- If the computer is still malfunctioning, open the case.
- Clean any dust or foreign material out of the case.
- Try to boot the computer to the hard drive, or to a bootable CD/DVD disk if necessary.
- Check the CMOS setup program and correct any configuration problems.
- Look for unwanted changes.
- Isolate the problem to one piece of hardware, or one software package.

For more information about hardware repair guidelines, read and understand the information on slides 47-68 on the link <http://bit.ly/3bq5XC2HardwareRepairGuidelines>

LEARNING ACTIVITY 3. BEST PRACTICES

Directions. Identify five (5) best practices related to hardware repairs. Then, give a brief explanation about these practices in general.



<https://bit.ly/3blZH8y>



- 1.
- 2.
- 3.
- 4.
- 5.



Brief Explanation:

Not all parts of the computer system are repairable, some can be replaced and most of the time, upgraded. Some of the basic computer hardware that are replaceable are power supply, hard drive, or RAM. These parts can be replaced if cannot be repaired because these parts are very important for your computer to function well. During the previous year you already gained knowledge and understanding on the disassembly and assembly of computer which is a prerequisite in replacing the components. To know more about commonly replaced and upgraded computer components, click on the link <http://bit.ly/3tCGUlaReplacingUpgrading>

LEARNING ACTIVITY 4. YOU COMPLETE ME!

Directions. Complete the table below with the appropriate components. Then, give at least three general considerations when replacing/upgrading components. Write your answers on a separate sheet of paper.

COMPUTER COMPONENTS	OLDER	RREPLACE WITH
hard drive	1.	Solid State Drive (SSD)
monitor	CRT monitor	2.
optical drive	3.	DVD ROM/writer
mouse	4.	5.
graphics card	6.	7.

General Considerations when replacing/upgrading components:

- 8.
- 9.
- 10.

IV. LEARNING PHASES AND LEARNING ACTIVITIES

A. Assimilation (Time Frame: 30 minutes)

To synthesize your learned information based on the given content and relate your learned concepts to your personal life, you will do the next activity

LEARNING ACTIVITY 5. THE FINAL QUESTION

Directions. Answer the question below. Write your answers on a separate sheet of paper.

THE FINAL QUESTION!

What are the three (3) important things you learned from the lesson and how would you apply these when repairing or replacing components and in maintaining computers in general?

V. ASSESSMENT (Time Frame: 25 minutes)

(Learning Activity Sheets for Enrichment, Remediation, or Assessment to be given on Weeks 3 and 6)

MATCHING TYPE

Directions. Match Column A with Column B. Write the letter of the correct answer on a separate sheet of paper

COLUMN A	COLUMN B
1. It means keeping your computers and laptops in good condition through regular cleanings, hard drive updates, and virus prevention.	A. computer maintenance
2. It is the process of reorganizing the data on your hard drive to speed up file access.	B. defragging
3. It is the process of replacing a product with a newer version of the same product	C. malicious software
4. It means to rectify, to fix the problem either in the hardware or software.	D. repair
5. It is any software used to disrupt computer or mobile operations, gather sensitive information, gain access to private computer systems, or display unwanted advertising.	E. upgrading
	F. virus

TRUE OR FALSE

Directions. Write REPAIR if the statement is correct and REPLACE if it is wrong. Write your answer on a separate sheet of paper.

- SSDs don't spin, so their speed isn't measured in rpms. But they are significantly faster and (because they have no moving parts) less prone to mechanical problems than traditional drives.
- Before opening a computer case, always plug the power cord of the computer to the outlet.
- Most laptop batteries will last at least four hours when fully charged. If not maintained, however, the battery will require charging more frequently. for maximum performance.
- Set up your computer in an area of your office or home that does not get good airflow,
- Every three to six years you should do a thorough cleaning of your entire hardware system.

VI. REFLECTION (Time Frame: 15 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

✓ - I was able to do/perform the task. It was quite challenging, but it still helped me in understanding the target content/lesson.

? - I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

VII. REFERENCES

<http://bit.ly/2Qf20bZComputerMaintenance>
<http://bit.ly/3bq5XC2HardwareRepairGuidelines>
<http://bit.ly/3tCGUlaReplacingUpgrading>

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W8	Learning Area	TLE-Computer Systems Servicing	Grade Level	10												
	Quarter	4	Date													
I. LESSON TITLE		DIAGNOSIS AND IDENTIFICATION OF FAULTY SYSTEM														
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		LO 3. Diagnose faults of computer systems and networks TLE_IACSS9-12MRCN-IIIa-h-42 3.2 Diagnose faults or problems in the computer systems and networks according to requirements and in line with the standard procedures														
III. CONTENT/CORE CONTENT		<ul style="list-style-type: none">Diagnostic proceduresIdentifying and isolating faults/problems<ul style="list-style-type: none">- Diagnostic software utilities														
IV. LEARNING PHASES AND LEARNING ACTIVITIES																
I. Introduction (Time Frame: 1 hour) Although most complex computer issues at work can often be solved by the business IT support team, there are many other small, but common, issues that occur on a regular basis on a personal computer. The good news is that many problems with computers have simple solutions and learning to recognize a problem and fix it yourself will save you a lot of time and money. Preliminary Activity. Directions. Name at least three (3) common computer/mobile phone problems you (or other members of the family) have encountered. Identify the probable cause and give ways on how you deal with them.																
<table><tr><th>PROBLEM</th><th>PROBABLE CAUSE</th><th>SOLUTION</th></tr><tr><td>1.</td><td></td><td></td></tr><tr><td>2.</td><td></td><td></td></tr><tr><td>3.</td><td></td><td></td></tr></table>					PROBLEM	PROBABLE CAUSE	SOLUTION	1.			2.			3.		
PROBLEM	PROBABLE CAUSE	SOLUTION														
1.																
2.																
3.																
<p>Probably the most frustrating problem computer users run into are startup problems, where your computer won't boot. Equally annoying are error messages you constantly run into during your computer's startup process. In this module you will be given a few tips on how you can avoid some of the most common problems that happen right after your computer turns on.</p> <p>Troubleshooting Plan for Personal Computers Here you will learn the basic troubleshooting methods of your computer.</p> <p>A. Trial and error. When you find a faulty component in your computer, check it with the other computers so that you can make sure whether the fault is in the component or not.</p> <p>B. Check cables. In case of any device failure, check all the cables of your computer such as data cables, power cable, internal circuitry cables and make sure that all these are plugged in and working fine.</p> <p>C. Hardware settings. Check the hardware settings in the CMOS and in the device manager of the system and make all the device drivers are up to date and all the cards are plugged in properly.</p> <p>D. Notice changes. When you notice a software or hardware error in your computer, determine what was changed before the problem occurred.</p> <p>E. Event viewer. In the event viewer, you will find the error or warning messages associated with any faulty hardware or software.</p> <p>F. Make notes. Troubleshooting is a big learning option, and we can learn a lot when we face any kind of troubleshooting in our computer. Make notes including the error messages and their solutions, so that you have a record on how a certain problem occurred and how did you solve it.</p> <p>Common Trouble for Computer Units</p> <ol style="list-style-type: none">Double check the power connections.Voltage Regulator and power supply could cause power failure in the computer unit.Check the power cords and cable connectors in your computer unit.Unseated card. Loose cards could cause it to malfunction.Do you have ink or toners in your printer? Check the ink toners/cartridges in your printers.Check the boot sequence configuration in the advance BIOS (Basic Input/output Unit) setup. <p>These are the things to look for if a PC will not connect to the internet or network.</p> <ol style="list-style-type: none">First check the cable connecting to the network card into the network hub.Check the back of the computer to see if the network card light is onCheck the network cableCheck the network HUB																

SAMPLE DIAGNOSTIC PLAN

Problem/Symptoms: Dead Computer Monitor	Good	Defective	Remedy (provide solutions for defective components)
Components to check:			
AC outlet			
AVR			
AVR fuse			
Monitor power cable			
Monitor switch			
power supply			
VGA cable			

LEARNING ACTIVITY 1. PLAN IT!

Directions. Think of one (1) of the most common computer problems or you may refer from your answers on the Preliminary Activity. Create a diagnostic plan for your chosen problem. Follow the sample above. Write your plan on a separate sheet of paper.

MY DIAGNOSTIC PLAN

D. Development (Time Frame: 1 hour and 20 minutes)

It seems to happen all the time – a deadline is approaching, or an email urgently needs to be sent when, out of nowhere, your computer faults at the worst possible time. However, as the computer faults become consistent, is the answer to buy a new laptop or a PC? Well, in this part, we will look at some of the common computer problems and their repair solutions.

To learn more about the common PC problems and solutions, watch the video clip through

<http://bit.ly/3uh61uwPCProblems>

LEARNING ACTIVITY 2. MATCH IT!

Directions. Match the common PC problems and solutions with each other. Write the letter of the correct answer on a separate sheet of paper.

PC Problems	Solutions
<ol style="list-style-type: none"> 1. An application is running slowly 2. Power button will not start computer 3. The sound isn't working 4. The screen is blank 5. Noisy Computer 6. My keyboard is frozen 7. An application is frozen 8. My number keypad does not work. 9. My mouse is frozen. 	<ol style="list-style-type: none"> A. Shut the computer down by going to Start on the task bar, then Shut Down from the pop-up menu. Unplug the keyboard connection from the port and reinsert tightly. B. You can continue working using the shortcut keys, the control keys, and the arrow keys. C. Force quit the application. On a PC, you can press (and hold) Ctrl+Alt+Delete (the Control, Alt, and Delete keys) on your keyboard to open the Task Manager. D. Begin by checking the power cord to confirm that it is plugged securely into the back of the computer case and the power outlet. E. The reason of this is Dirty Fan F. Close and reopen the application. G. Check the volume level. H. The computer may be in Sleep mode. Click the mouse or press any key on the keyboard to wake it. I. Push the Num Lock key in the upper left corner of the keypad

The examples cited in the clip are just few of the most common computer problems. To learn more about computer problems and their solutions, read the Information Sheet on <http://bit.ly/3wvC6jHDiagnosisoffaultySystem>

IV. LEARNING PHASES AND LEARNING ACTIVITIES

LEARNING ACTIVITY 3. THE DOCTOR IS IN!

Directions: Complete the table below. Choose a partner (it could be a classmate whom you can talk to from a distance or a household member) and discuss the best solutions on the given computer problems (Choose only five (5) problems). Write the probable cause and solution. Provide two solutions on each problem, one from you and one from your partner. Ch

Problem	Probable Cause	Solution
Keyboard failure		1.
		2.
Shared printer cannot be found		1.
		2.
System won't turn on		1.
		2.
Slow internet		1.
		2.
Overheating		1.
		2.
Monitor won't turn on		1.
		2.
System boot loop		1.
		2.
Strange noises		1.
		2.
OS won't boot		1.
		2.
Can't connect to the internet		1.
		2.

E. Engagement (Time Frame: 40 minutes)

Diagnostic software is used to identify problems on a computer or piece of equipment. These programs test the onboard systems for issues and help to alert users of potential problems or breakdowns. Over the years, these programs have gone from very basic to complex and highly specialized. With this increase in technology, the skill required to use the software has decreased to the point where most people can use this software with little or no training.

To learn more about diagnostic software utilities, read and understand the information sheet on <http://bit.ly/34fRBjGDiagnosticUtilities>

LEARNING ACTIVITY 4. FILL ME UP!

Directions. Fill in the blanks with the correct letters to complete the terms related to diagnostic software tools. Use the hint for you answer. Write your answers on a separate sheet of paper.

TERMS	HINT
1. A _ _ _ n _ _ _ S _ _ _ e _ C _ _ _	-Tunes up and maintains your PC, with anti-spyware, privacy protection, and system cleaning functions.
2. _ l _ _ C _ _ _ _ U _	-Removes unused files.
3. R _ _ D _ _ _ _ _	-Improves your system performance and stability by repairing and cleaning the Windows Registry
4. _ _ _ - Z	-Accesses various information's about your computer
5. _ c _ _ _ l _ _	-Checks for physical errors on the disk surface.
6. _ d _ _ _	-Creates and deletes disk partitions.
7. W _ _ _ _ e _ _ _ _ _ y C _ _ _ _ e _	-Cleans the registry portion of the hard drive

IV. LEARNING PHASES AND LEARNING ACTIVITIES

A. Assimilation (Time Frame: 20 minutes)

To synthesize your learned information based on the given content and relate your learned concepts to your personal life, you will do the next activity.

LEARNING ACTIVITY 5. EXIT TICKET

Directions. Answer the Exit Ticket honestly below for you to be able to move on with the last part of this learning activity.

EXIT TICKET HOW WELL DID YOU UNDERSTAND THE LESSON?	
3 THINGS I LEARNED TODAY	1. _____ 2. _____ 3. _____
2 THINGS I FOUND INTERESTING	1. _____ 2. _____
1 QUESTION I STILL HAVE	1. _____

V. ASSESSMENT (Time Frame: 25 minutes)

(Learning Activity Sheets for Enrichment, Remediation, or Assessment to be given on Weeks 3 and 6)

TRUE OR FALSE

Directions. Write SOLUTION if the statement is correct and PROBLEM if it is wrong.

1. Make notes including the error messages and their solutions, so that you have a record on how a certain problem occurred and how did you solve it.
2. Diagnostic software is used to identify problems on a computer or piece of equipment.
3. If your computer does not start, begin by checking the power cord to confirm that it is plugged snugly into the back of the computer case and the power outlet.
4. Pressing Windows logo key + O opens the Run dialog box.
5. ARO 2013 protects your PC from browser hijacker, malicious plug-ins, malwares, adware, various viruses.
6. Defragment optimizes use of space on a disk.
7. RegDoctor cleans the registry portion of the hard drive
8. To use the numeric keypad of the keyboard, turn the **Num Lock** on by pushing the Num Lock key in the upper left corner of the keypad.
9. Pressing Windows logo key + N minimizes all open windows.
10. When you find a faulty component in your computer, check it with the other computers so that you can make sure whether the fault is in the component or not.

VI. REFLECTION (Time Frame: 15 minutes)

- Communicate your personal assessment as indicated in the Learner's Assessment Card.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below:

☆ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/ lesson.

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VII. REFERENCES

Lujero, Rosalie P. and Ramilo, Ronaldo V., Computer Hardware Servicing –Grade 10, Learner's Material, First Edition, 2013, pages 231-242
CSS 12 LEAP-Link Week 2

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