Strengthened Senior High School

DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheets for Computer Systems Servicing

TECH-PRO ELECTIVE



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Learning Activity Sheets for Computer Systems Servicing
Grade 11-Term 1

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LEARNING ACTIVITY SHEET (LAS)

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	1	**Date**	
Lesson Title/Topic:	Computer Disassembly and Assembly Procedure		
Name		**Grade & Section**	

I. Activity No. 3.1: "Skill Check: Future Ready"

II. Objective(s): At the end of the activity, you should be able to:

1. Identify the different components of a computer system
2. Demonstrate responsibility in following standard procedures during disassembly and assembly tasks.
3. Perform complete disassembly and assembly of computer hardware with speed and accuracy.

III. Materials Needed:

- Printed activity sheet (job roles and task list)
- Images or short descriptions of ICT jobs (PowerPoint or printed visuals)
- Pen or pencil
- Whiteboard/marker (for discussion)

IV. Instructions:

A. Job Role Identification

1. Carefully observe the images or read the descriptions shown by your teacher.
2. Identify the following job roles:
   - Computer Technician
   - IT Support Specialist
   - Network Installer

B. Matching Activity

Below is a list of tasks. Match each task to the correct job role by writing the letter of the task beside the job description.

Job Roles:

A. Computer Technician
B. IT Support Specialist
C. Network Installer

Tasks:

1. ___ Assembles and disassembles computer hardware
2. ___ Troubleshoots software and hardware issues for user
3. ___ Installs network cables and sets up internet
4. ___ Diagnoses faulty computer parts and replaces them
5. ___ Provides technical assistance and help desk support
6. ___ Configures routers and network devices

C. Reflection

Answer the following question in 2–3 sentences:

Which job role are you most interested in and why?

_____

_____

_____

_____

V. Synthesis:

For Struggling Learners:

A. Matching Activity

Instructions: Match each task with the correct job role by writing the letter (A, B, or C). Images/icons are provided to help.

Word Bank:
A. Computer Technician
B. IT Support Specialist
C. Network Installer

Task	Image/Icon	Job Role
1. Assembles and disassembles computer hardware		
2. Troubleshoots software and hardware issues for users		
3. Installs network cables and sets up internet connections		
4. Diagnoses faulty computer parts and replaces them		
5. Provides technical assistance and help desk support		
6. Configures routers and network devices		

B. Reflection

Answer the following question in 2–3 sentences:

Which job role are you most interested in and why?

_____

_____

For Advanced Learners:

A. Matching Activity

Below is a list of tasks. Match each task to the correct job role by writing the letter of the task beside the job description.

Job Roles:

A. Computer Technician

B. IT Support Specialist

C. Network Installer

D. Cybersecurity Analyst

E. Cloud Engineer

Tasks:

1. ___ Assembles and disassembles computer hardware
2. ___ Troubleshoots software and hardware issues for users
3. ___ Installs network cables and sets up internet connections
4. ___ Monitors security threats and protects data
5. ___ Manages cloud servers and virtual environments
6. ___ Provides technical assistance and help desk support
7. ___ Configures routers and network devices

B. Reflection

Answer the following question in 2–3 sentences:

Which job role are you most interested in and why?

_____

_____

_____

_____

_____

_____

_____

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	2	**Date**	
Lesson Title/Topic:	Computer Disassembly and Assembly Procedure		
Name		**Grade & Section**	

I. Activity No.3.2: "Build It Right with COMPSIMU"

II. Objective(s): At the end of the activity, you should be able to:

1. Identify the different components of a computer system
2. Demonstrate responsibility in following standard procedures during disassembly and assembly tasks.
3. Perform complete disassembly and assembly of computer hardware with speed and accuracy.

III. Materials Needed:

- Desktop computers or laptops with COMPSIMU installed (https://apps.microsoft.com/detail/9ns4tq5n0hww?hl=en-US&gl=PH)
- Printed activity sheet, rubrics
- Pen or pencil

IV. Instructions:

A. Activity Description:

- Learners will explore the COMPSIMU simulator to virtually disassemble and assemble a computer system. They will follow guided steps within the simulation while identifying each component and observing proper procedures.

B. Procedures

1. **Introduction**
   - Teacher briefly introduces COMPSIMU and its purpose.
   - Review safety precautions and proper handling of computer components.
2. **Simulation Task**
   - Learners open COMPSIMU and begin the guided simulation.
   - Phase 1: Disassembly
     - Identify and remove components step-by-step (e.g., RAM, HDD/SSD, motherboard, power supply).
     - Take note of proper sequence and handling.
   - Phase 2: Assembly
     - Reassemble the computer by following correct procedures.
     - Ensure that all components are placed accurately.

V. Synthesis:

Sharing and Reflection

- Selected learners share their experiences.
- Guide questions:

    1) *Why is it important to follow proper procedures in assembling and disassembling a computer?*
    2) *Which component did you remove first? Why is it important to follow this sequence?*
    3) *Did you encounter any difficulty while disassembling? What did you do to solve it?*
    4) *What safety practices did you observe while using COMPSIMU?*
    5) *Which part of the activity did you find most challenging? Why?*

Assessment Checklist: COMPSIMU PC Assembly and Disassembly

Directions: Put a ✔ in the column that corresponds to the learner's performance.

Criteria	Observed (✔)	Not Observed (X)
A. Knowledge of Components		
1) Correctly identify major computer components (CPU, RAM, motherboard, PSU, storage)		
2) Demonstrates understanding of each component's function		
B. Disassembly Skills		
3) Follows the correct sequence in disassembling parts		
4) Handles components carefully and appropriately		
5) Observes proper safety procedures during disassembly		
C. Assembly Skills		
6) Reassembles components in the correct order		
7) Places components accurately in their proper slots/positions		
8) Completes the assembly without major errors		
D. Use of COMPSIMU		
9) Navigates the simulation effectively		
10) Completes the simulation tasks within the given time		
E. Work Attitude		
11) Shows focus and responsibility during the activity		
12) Demonstrates willingness to follow instructions and procedures		

Scoring Guide:

- 10–12 checks – Outstanding
- 7–9 checks – Satisfactory
- 4–6 checks – Needs Improvement
- 0–3 checks – Beginning

Rubrics for Activity No. 3.2

Criteria	Excellent (4)	Good (3)	Fair (2)	Needs Improvement (1)
Knowledge of Components	Accurately identifies all components and clearly explains their functions	Identify most components and explain their functions with minor errors	Identifies some components but has limited understanding of functions	Unable to identify components or explain functions
Disassembly Skills	Follows correct sequence independently; handles all parts safely and properly	Follows correct sequence with minimal guidance; minor handling errors	Inconsistent sequence; requires guidance; improper handling observed	Unable to follow sequence; mishandles components
Assembly Skills	Reassembles all parts correctly, accurately, and efficiently without errors	Reassembles most parts correctly with minor errors	Reassembles some parts but with several errors; needs assistance	Unable to reassemble parts correctly
Use of COMPSIMU	Navigates simulation confidently and completes tasks on time or early	Navigates well and completes tasks on time	Has difficulty navigating; completes tasks with delays	Unable to navigate simulation or complete tasks

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	3	**Date**	
Lesson Title/Topic:	Computer Disassembly and Assembly Procedure		
Name		**Grade & Section**	

I. Activity No.3.3: "PC Puzzle Challenge"

II. Objectives:

1. Identify the different components of a computer system
2. Demonstrate responsibility in following standard procedures during disassembly and assembly tasks.
3. Perform complete disassembly and assembly of computer hardware with speed and accuracy.

III. Materials Needed:

- Desktop computers
- Screwdrivers and basic tools for assembly/disassembly
- Anti-static wrist straps and mats
- Labels, markers, or component tags
- Personal protective equipment (PPE) if necessary

IV. Instructions

A. Activity Description:

- Learners will demonstrate hands-on skills in disassembling and assembling computer components safely and correctly.

B. Procedures

1. Introduction
    - Briefly review the importance of safety in handling computer hardware (OHS standards).
    - Explain the activity: learners will disassemble a computer, identify and label each component, and then reassemble it correctly.
    - Emphasize teamwork, careful handling, and step-by-step execution.
2. Demonstration
    - Model the correct method of disassembly and assembly.
    - Show how to use tools safely, handle sensitive components, and label parts accurately.
    - Highlight common mistakes to avoid (e.g., forcing parts, touching motherboard with bare hands, loose screws).

3. Activity Execution
    - Divide learners into small groups (2–3 per group).
    - Each group disassembles their assigned computer system step by step.
    - Learners identify and label each component (e.g., CPU, RAM, PSU, motherboard, GPU, storage devices).
    - After disassembly, groups reassemble the system in the correct order, following OHS standards.
    - Teachers circulate to monitor safety, provide guidance, and answer questions.
4. Assessment
    - Check each group's assembled computer for correctness and functionality.
    - Evaluate labeling, safety practices, and adherence to procedures.

V. Synthesis

Ask learners to reflect:

1) *What steps did you follow in disassembling and reassembling the computer system?*
2) *Which computer component was the most difficult to identify or handle? Why?*
3) *What safety precautions (OHS standards) did you practice during the activity?*
4) *What challenges did your group encounter, and how did you solve them?*
5) *How did teamwork help you complete the task successfully?*

Rubrics for Activity No. 3.3

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Disassembly Skills	Disassembles all components correctly, systematically, and with no errors	Disassembles most components correctly with minimal errors	Disassembles some components but with noticeable errors or confusion	Unable to properly disassemble components; frequent errors
Identification & Labeling	Accurately identifies and labels all components clearly	Identifies and labels most components correctly	Identifies some components but with errors or incomplete labels	Unable to identify or label components correctly
Assembly Skills	Reassembles all components correctly and system is fully functional	Reassembles most components correctly with minor errors	Reassembles some parts but system is incomplete or has errors	Unable to reassemble system correctly
Safety & OHS Practices	Consistently follows all safety procedures (proper tool use, anti-static precautions)	Follows most safety procedures with minor lapses	Inconsistently follows safety procedures	Does not follow safety procedures
Use of Tools & Equipment	Uses tools properly and confidently at all times	Uses tools correctly with minimal guidance	Uses tools with some difficulty or improper handling	Misuses tools or requires constant assistance
Teamwork & Collaboration	Actively contributes, communicates well, and supports group members	Works well with group with occasional guidance	Limited participation or cooperation	Does not cooperate or participate effectively

Scoring Guide:

- 27–30 points – Outstanding Performance
- 21–26 points – Satisfactory Performance
- 15–20 points – Developing Skills
- 14 points and below – Needs Improvement

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	4	**Date**	
Lesson Title/Topic:	Computer Disassembly and Assembly Procedure		
Name		**Grade & Section**	

I. Activity No.3.4: "Troubleshoot & Rebuild Race"

II. Objectives:

1. Identify the different components of a computer system
2. Demonstrate responsibility in following standard procedures during disassembly and assembly tasks.
3. Perform complete disassembly and assembly of computer hardware with speed and accuracy.

III. Materials Needed:

- Computer system unit (with pre-set faults)
- Monitor (optional, for testing)
- Keyboard and mouse (optional, for testing)
- Screwdrivers (Phillips/flat head)
- Anti-static wrist strap
- Cleaning brush or cloth (optional)
- RAM modules
- Hard Disk Drive (HDD) or Solid-State Drive (SSD)
- Power Supply Unit (PSU)
- Cables (SATA, power cables, front panel connectors)
- Graphics card (if applicable)
- Personal protective equipment (PPE)
- Printed Task Sheet / Worksheet
- Rubric for assessment
- Timer or stopwatch
- Whiteboard/marker (for instructions and time tracking)

IV. Instructions

A. Activity Description:

- Learner's goal is to diagnose, troubleshoot, and correctly reassemble a malfunctioning computer system by applying proper procedures, technical knowledge, and safety practices.

B. Procedures:

1. Before starting, make sure to:
    - Turn off and unplug the computer
    - Handle parts carefully (RAM, motherboard, cables)
    - Avoid forcing components into place
    - Keep your workspace clean and organized

2. Activity Proper
    - Distribute the faulty computer units to each group.
    - Start the timer and announce:

      "The race begins now. Diagnose the problem, fix it, and rebuild the system correctly."
    - While learners work, the teacher should:
        - Observe and monitor group dynamics and participation
        - Ask guide questions, such as:
            a) *What do you think is causing the issue?*
            b) *Which component should be checked first?*
            c) *Are all connections secured properly?*
        - Provide minimal hints only when necessary (facilitate, don't solve)

A. Observation and Diagnosis

Directions: Inspect your assigned computer unit. Identify at least 5 issues or faults.

No.	Observed Problem / Fault	Component Involved	Possible Cause
1			
2			
3			
4			
5			

B. Troubleshooting Actions

Directions: List the steps your group performed to fix the issues.

C. Assembly Checklist

Directions: Put a ✓ if properly done.

Task	✓ / ✗
1) All cables properly connected	
2) RAM correctly installed	
3) Storage devices properly connected	
4) Power supply securely attached	
5) Components properly seated	
6) No loose screws or parts	
7) System ready for testing	

3. Checking and validation
    - Once a group finishes:
        - Inspect their work using a checklist:
            - Proper placement of components
            - Correct cable connections
            - Secure assembly
        - If possible, test the system (power on).
    - Record completion time and accuracy.

V. Synthesis

After all groups finish, conduct a short discussion:

- Ask reflective questions:

    1) What was the main problem that your group identified in your system?
    2) What was the most challenging part of the activity?
    3) How did your group work together to solve the problem?
    4) Why is proper assembly important in computer systems?
    5) If given another chance, what would you improve?

- Highlight key learning points:
    - Troubleshooting requires systematic thinking
    - Accuracy is more important than speed
    - Teamwork improves efficiency

Rubrics for Activity No. 3.4

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Accuracy of Troubleshooting and Assembly	All faults correctly identified and fixed; system fully and properly assembled with no errors	Most faults identified and fixed; minor errors in assembly but system works	Some faults identified; several errors in assembly; system partially working	Few or no faults identified; incorrect assembly; system not functional
Time Efficiency	Completed task within time limit with excellent speed and organization	Completed within time limit with acceptable pacing	Completed task but exceeded time limit slightly	Did not complete task within time limit
Teamwork and Participation	All members actively participated; roles clearly shared; excellent cooperation	Most members participated; good teamwork	Limited participation; some members inactive	Poor teamwork; lack of cooperation and participation
Observance of Safety Procedures	Consistently followed all safety rules; handled components properly at all times	Followed most safety procedures with minimal reminders	Sometimes followed safety rules; needed reminders	Did not follow safety procedures; unsafe handling observed

Scoring Guide:

- 18–20 points – Outstanding Performance
- 14–17 points – Satisfactory Performance
- 10–13 points – Developing Skills
- 9 points and below – Needs Improvement

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	5	**Date**	
Lesson Title/Topic:	Computer Disassembly and Assembly Procedure		
Name		**Grade & Section**	

I. Activity No.3.5: "Multiple Choice Quiz"

II. Objectives:

1. Identify the different components of a computer system
2. Demonstrate responsibility in following standard procedures during disassembly and assembly tasks.
3. Perform complete disassembly and assembly of computer hardware with speed and accuracy.

III. Materials Needed:

- Test questionnaire
- Pen

IV. Instructions

A. Activity Description:

- Directions: Read the questions and choose the letter of your chosen answer.

1. While preparing to disassemble a computer, Celestine remembers her teacher emphasizing safety first. What should she do before opening the system unit?
   A. Disconnect power and all external cables
   B. Wear gloves without unplugging power source
   C. Remove RAM modules before unplugging system
   D. Press power button repeatedly before unplugging

2. While removing screws, Rommel mixes them all together, causing confusion later. What is the **BEST** practice?
   A. Place screws randomly on working table
   B. Throw unused screws to avoid confusion
   C. Group screws according to component location
   D. Keep screws inside pocket during disassembly

3. After reassembly, the computer does not boot. What could be the **MOST LIKELY** reason?
   A. Too many screws used during assembly
   B. Using different screws for each component
   C. Loose cable connections inside system unit
   D. Over-tightened screws affecting system performance

4. While installing RAM, Mia touches the gold contacts. What is the **CORRECT** handling practice?

   A. Hold RAM by edges avoiding contact pins
   B. Press contacts to ensure proper connection
   C. Clean contacts using cloth before installing
   D. Touch contacts carefully before inserting module

5. During assembly, Ben works while the system is plugged in. What is the **RISK**?

   A. Faster assembly due to active power
   B. No effect if careful during assembly
   C. Electrical shock and component damage risk
   D. Improved system testing during assembly process

6. A class recorded issues encountered during improper disassembly.

Action Performed Incorrectly	Resulting Issue
Power not disconnected	Minor shock felt
CPU fan removed roughly	Bent fan pins
RAM pulled without lock	Slot damage
No anti-static protection	Static discharge

   Based on the data, which preventive measure addresses the **MOST FREQUENT** risk?

   A. Ground yourself using anti-static wrist strap
   B. Handle cooling fans with steady pressure
   C. Press RAM locks before removal
   D. Unplug system from power outlet

7. After reassembling a computer, the system does not power on. Anton reviews the steps he performed.

   Checklist Review:
   - ✓ PSU connected
   - ✓ Power button cable connected
   - ✗ RAM not fully seated
   - ✓ CPU securely locked

   Which oversight **MOST LIKELY** caused the system failure?

   A. Improperly seated memory modules
   B. Loose central processing unit
   C. Missing motherboard mounting screws
   D. Unconnected hard drive power cable

8. Evaluate the safe practices done by two Grade 11 learners.

   Student A
   - Uses labeled containers for screws
   - Refers to motherboard manual

   Student B
   - Places screws randomly
   - Assembles from memory

   Which practice reduces assembly errors **MOST** effectively?

   A. Reusing screws from other cases
   B. Speeding up installation process
   C. Memorizing assembly steps beforehand
   D. Following official motherboard documentation

9. A Grade 12 student wants to reassemble the system faster with fewer mistakes.

Screw Organization Methods

- Method A: Mixed pile on desk
- Method B: Labeled containers
- Method C: Screws taped randomly

Which method **BEST** supports this goal?

A. Taping screws onto case
B. Dumping all screws together
C. Using labeled containers for screws
D. Memorizing screw locations mentally

10. A technician is tasked with upgrading the CPU of a workstation. Before reaching the processor, several components must be removed in a specific order to prevent hardware damage and ensure safety.

Standard Disassembly Protocol		
Step ID	**Procedure**	**Safety Requirement**
P-01	Remove Peripheral Cables	Disconnect external power source first.
P-02	Detach Side Panel	Use appropriate screwdriver to avoid stripping.
P-03	Disconnect Power Cables	Ensure internal capacitors are discharged.
P-04	Remove Expansion Cards	Release the PCIe locking mechanism.
P-05	Unmount Heat Sink	Apply even pressure to avoid CPU cracking.

According to the protocol and standard safety practices, why must **P-03** be completed before removing internal components like the RAM or Expansion Cards?

A. Prevent data loss on drives
B. Keep the system components cool
C. Maintain the physical case stability
D. Avoid accidental electrical short circuits

KEY ANSWERS

1) A
2) C
3) C
4) A
5) C
6) A
7) A
8) D
9) C
10) D

V. Synthesis

Answer the following reflective questions in 2–3 sentences:

1. *Why is it important to follow the correct sequence during disassembly and assembly?*
2. *How confident are you now in assembling and disassembling a computer? Why?*
3. *Why is it important to observe safety precautions when handling computer hardware?*
4. *What did you learn from your classmates while working together?*
5. *How can the skills you learned today be applied in real-life situations?*

Rubrics for Reflection Questions

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Depth of Reflection	Shows deep insight; answers are thoughtful, detailed, and show strong understanding of the activity	Shows clear understanding with some reflection and explanation	Shows basic understanding but lacks depth or detail	Shows little to no understanding; answers are vague or incomplete
Connection to Experience	Clearly connects reflections to actual experience during disassembly/assembly with specific examples	Makes some connection to experience but lacks specific details	Limited or unclear connection to actual experience	No connection to the activity
Critical Thinking	Demonstrates strong analysis (identifies challenges, solutions, and improvements clearly)	Shows some analysis but lacks deeper explanation	Limited analysis; mostly descriptive	No analysis; purely surface-level answers
Clarity and Organization	Ideas are very clear, well-organized, and easy to understand	Generally clear but may have minor lapses in organization	Somewhat unclear or disorganized	Difficult to understand; poorly organized
Use of Technical Concepts	Accurately uses relevant terms (e.g., components, procedures, safety practices)	Uses some correct terms but with minor errors	Limited use of technical terms	No or incorrect use of technical concepts

Scoring Guide:

- 23–25 points – Outstanding Performance
- 20–23 points – Satisfactory Performance
- 17–19 points – Developing Skills
- 16 points and below – Needs Improvement

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	6	**Date**	
Lesson Title/Topic:	Preparing Application and System Software		
Name		**Grade & Section**	

I. Activity No.4.1: "Build It Right with COMPSIMU"

II. Objectives:

1. Explain the purpose and importance of portable bootable devices in system installation, recovery, and troubleshooting.
2. Create an ISO image using a third-party application or DOS commands
3. Exhibit patience and problem-solving attitude when troubleshooting bootable

III. Materials Needed:

- Desktop computers or laptops (1:1 or per group)
- USB flash drives (at least 8GB capacity)
- Stable power supply / extension cords (if needed)
- ISO creation software (e.g., Rufus, Power ISO or similar)
- Operating system installer or sample software files (for ISO creation)
- Pre-downloaded ISO files (for demonstration or backup)
- Step-by-step activity guide or worksheet
- Visual aids (slides or printed screenshots of procedures)
- Projector or smart TV (for demonstration)
- Checklist for task completion
- Rubric for assessment

IV. Instructions

A. Activity Description:

Learners will demonstrate software preparation skills by creating a functional ISO image and converting it into a bootable USB device for installation or troubleshooting.

B: Procedures

1. Preparation (Before the Activity)
   - Ensure all computers have necessary tools (e.g., ISO creation software like Rufus, Power ISO, or access to DOS commands).
   - Prepare sample software/files for ISO creation.
   - Provide USB drives (at least 8GB, formatted).
   - Check that BIOS/UEFI boot settings can be demonstrated if needed.

2. Introduction
   - Begin with a quick discussion:
     - Ask: *Why are bootable devices important in real-life ICT work?*
   - Briefly explain:
     - What an ISO image is
     - Its purpose in system installation and recovery
   - Show a short demo or visual of the process.
3. Activity Proper

   A. ISO Creation
   - Instruct learners to:
     - Select the given software/files
     - Use a third-party tool or DOS command to create an ISO image
   - Teacher roams around to:
     - Assist learners encountering errors
     - Check correct file selection and settings

   B. Bootable USB Creation
   - Guide learners to:
     - Insert USB drive
     - Use a tool (e.g., Rufus) or command-line method
     - Select the created ISO file
     - Configure boot settings (MBR/GPT, file system if needed)
   - Emphasize:
     - Correct drive selection (to avoid data loss)
     - Proper formatting process
4. Monitoring and Support
   - Observe learners:
     - Step-by-step process
     - Problem-solving strategies
   - Provide scaffolding for struggling learners:
     - Step guides or peer support
   - Challenge advanced learners:
     - Try both GUI tools and DOS commands
5. Output Checking
   - Require learners to:
     - Show their bootable USB
     - Present a simple workflow diagram of steps followed
   - Optional:
     - Test bootability (if time and equipment allow)

V. Synthesis

Sharing and Reflection

- Selected learners share their experiences.
- Guide questions:
  - *What challenges did you encounter while creating the ISO or bootable USB?*
  - *How can this skill be useful in real-world ICT jobs?*

Rubric for Activity No. 4.1

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Accuracy of ISO Creation	ISO created correctly with no errors; proper files and format used	Minor errors but ISO is functional	Several errors; ISO partially functional	Incorrect or failed ISO creation
Bootable USB Preparation	USB is fully bootable; correct settings applied (partition, file system)	Bootable with minor configuration issues	Bootable but with noticeable errors	USB not bootable or incorrect process
Procedure & Process	Followed all steps systematically and independently	Followed most steps with minimal guidance	Needed frequent guidance to complete steps	Unable to follow procedure properly
Time Efficiency	Completed task on time or ahead of time	Completed within allotted time	Completed but exceeded time limit	Did not finish task
Safety & Proper Handling	Demonstrated proper handling of devices and careful drive selection at all times	Minor lapses in handling but no major issues	Occasional improper handling or confusion	Unsafe practices; risk of data loss or damage

Scoring Guide:

- 23–25 points – Outstanding Performance
- 20–23 points – Satisfactory Performance
- 17–19 points – Developing Skills
- 16 points and below – Needs Improvement

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	7	**Date**	
Lesson Title/Topic:	Preparing Application and System Software		
Name		**Grade & Section**	

I. Activity No.4.2: "Tech Support Simulation: System Down Scenario"

II. Objectives:

1. Explain the purpose and importance of portable bootable devices in system installation, recovery, and troubleshooting.
2. Create an ISO image using a third-party application or DOS commands
3. Exhibit patience and problem-solving attitude when troubleshooting bootable

III. Materials Needed:

- Desktop computers or laptops (1:1 or per group)
- USB flash drives (at least 8GB capacity)
- Stable power supply / extension cords (if needed)
- ISO creation software (e.g., Rufus, Power ISO or similar)
- Operating system installer or sample software files (for ISO creation)
- Pre-downloaded ISO files (for demonstration or backup)
- Step-by-step activity guide or worksheet
- Visual aids (slides or printed screenshots of procedures)
- Projector or smart TV (for demonstration)
- Checklist for task completion
- Rubric for assessment

IV. Instructions

A. Scenario:

A small computer shop receives a desktop computer that cannot boot into Windows due to a corrupted operating system. The shop does not have a DVD drive, and the owner requests an urgent repair. Your team is tasked to prepare a portable bootable device to install or repair the system.

B: Procedures

1. Grouping and Role Assignment (Before the Activity)

- Divide class into 4–5 groups.
- Assign or let them choose the following roles:
  - *Team Leader – manages workflow*
  - *Documentation Specialist – records steps and observations*
  - *Technician 1 – handles ISO file selection*
  - *Technician 2 – creates bootable USB*
  - *Troubleshooter – identifies possible errors/issues*

2. Activity Proper

A. Identifying the Need

- Guide learners to analyze the situation:
  - *Why is a bootable USB necessary in this case?*
  - *What problems are we solving?*

Key Points to Elicit:

✓ No optical drive available
✓ OS is corrupted
✓ Need for recovery/installation tool

B. Selecting the ISO File

- Prompt decision-making:
  - *Which ISO is best for this scenario?*
  - *What factors should you consider?*

Expected Outputs:

✓ Windows ISO for reinstall
✓ Recovery tools for repair

C. Creating Bootable USB

- Ensure proper steps:
  - *Insert USB drive*
  - *Open bootable software/tool*
  - *Select ISO file*
  - *Choose correct partition scheme (MBR/GPT)*
  - *Start process*

Monitor:

✓ Proper handling of USB devices
✓ Correct selection of options
✓ Team collaboration

Common Issues to Watch:

✓ Wrong file format
✓ USB not detected
✓ Incorrect boot mode selection

D. Simulation & Troubleshooting

- Ask groups to simulate booting process
- Provide possible error scenarios:
  - *USB not recognized in BIOS*
  - *Boot failure*
  - *Wrong boot order*
- Guide Questions:
  - *What will you check first?*
  - *How will you fix the issue?*

3. Presentation & Sharing

- Let each group present briefly:
  - Their chosen ISO
  - Steps performed
  - Troubleshooting strategies

V. Synthesis

Sharing and Reflection

- Selected learners share their experience.
- Guide questions:
  - *What was the most challenging part of the task?*
  - *Why is this skill important in real-life tech support?*
  - *What would you do differently next time?*

Rubric for Activity No. 4.2

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Accuracy of Procedure	All steps in creating the bootable device are performed correctly, systematically, and independently; demonstrates deep understanding of the process	Most steps are performed correctly with minor errors; shows good understanding with minimal guidance	Some steps are incorrect or out of order; requires guidance to complete the process	Steps are incorrect, incomplete, or not followed; unable to complete the task even with guidance
Teamwork and Role Fulfillment	All members actively participate and fully perform their assigned roles; strong collaboration and communication evident	Most members participate and perform roles; minor lapses in teamwork or coordination	Uneven participation; some members do not fulfill roles properly; limited collaboration	Little to no teamwork; roles are ignored or unclear; one or two members dominate or disengage
Problem-Solving Ability	Accurately identifies issues and provides effective, logical, and creative solutions; explains troubleshooting clearly	Identifies problems and suggests appropriate solutions with some guidance	Has difficulty identifying problems; solutions are partially correct or unclear	Unable to identify problems or provide appropriate solutions; responses are incorrect or missing
Documentation Quality	Documentation is complete, well-organized, clear, and detailed; includes all steps, observations, and explanations	Documentation is mostly complete and clear; minor missing details or organization issues	Documentation is incomplete or unclear; lacks important details or organization	Documentation is missing, very unclear, or poorly organized; lacks essential information

Scoring Guide:

- 18–20 points – Outstanding Performance
- 14–17 points – Satisfactory Performance
- 10–13 points – Developing Skills
- 9 points and below – Needs Improvement

LEARNING ACTIVITY SHEET

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	8	**Date**	
Lesson Title/Topic:	Preparing Application and System Software		
Name		**Grade & Section**	

I. Activity No.4.3: "Boot & Deploy Challenge"

II. Objectives:

1. Explain the purpose and importance of portable bootable devices in system installation, recovery, and troubleshooting.
2. Create an ISO image using a third-party application or DOS commands
3. Exhibit patience and problem-solving attitude when troubleshooting bootable

III. Materials Needed:

- Desktop computers or laptops (1:1 or per group)
- USB flash drives (at least 8GB capacity)
- Stable power supply / extension cords (if needed)
- ISO creation software (e.g., Rufus, PowerISO or similar)
- Operating system installer or sample software files (for ISO creation)
- Pre-downloaded ISO files (for demonstration or backup)
- Workflow diagram template / worksheet
- Rubric for assessment

IV. Instructions

A. Activity Description

- *Demonstrate the ability to prepare and deploy system and application software using multiple methods.*

B. Procedures

1. Task Briefing

- Explain the task clearly: learners must
  - *Create an ISO image*
  - *Make a bootable device using:*
    - ✓ DOS commands (e.g., disk part), OR
    - ✓ Third-party tools
  - *Document the process using a workflow diagram*
- Clarify Output Requirements:
  - *Working bootable USB/ device*
  - *Workflow diagram (step-by-step visual)*

2. Task Proper

A. Teachers' Role: Facilitator & Coach

- Move around and:
  - *Observe learner's progress*
  - *Ask probing questions:*
    - ✓ Why did you choose that method?
    - ✓ What will happen if that step is skipped?
  - *Assist struggling learners:*
    - ✓ Provide step hints
    - ✓ Pair them with peers
  - *Challenge advanced learners:*
    - ✓ Ask them to try both methods
    - ✓ Let them troubleshoot errors independently

B. Monitoring & Support

- Discuss the common issues which requires teacher interventions

Issue	Teacher Action
USB not detected	Check port, reinsert, verify disk selection
Incorrect disk selected	Remind to double-check disk number
Boot failure	Review formatting and partition steps
ISO not recognized	Verify file integrity

C. Output Presentation

- Learners present:
  - *Their bootable device (actual or simulated result)*
  - *Workflow diagram*

  Questions:
  - ✓ What method did you use and why?
  - ✓ What challenges did you encounter?
  - ✓ How did you solve them?

  Common Issues to Watch:
  - ✓ Wrong file format
  - ✓ USB not detected
  - ✓ Incorrect boot mode selection

V. Synthesis

Sharing and Reflection

- Selected learners share their experience.
- Guide questions:
  1. *What did you learn from this activity?*
  2. *What challenges did you encounter?*
  3. *How did you solve the problem?*
  4. *Why is creating a bootable device important in real-life IT work?*
  5. *What skills did you develop?*

Rubric for Activity No. 4.3

Criteria	Excellent (5)	Good (3)	Fair (2)	Needs Improvement (1)
Technical Output (Successful bootable device)	Bootable device works perfectly; successfully tested and verified	Bootable device works with minor issues; mostly functional	Bootable device partially works; incomplete or inconsistent	Failed to create a working bootable device
Process Understanding (Correct sequence of steps)	All steps are accurate, complete, and in correct order; demonstrates strong understanding	All steps are correct; minor errors in sequence	Some steps are incorrect or missing; shows limited understanding	Steps are mostly incorrect or missing; lacks understanding
Workflow Diagram (Clear, logical, complete)	Diagram is very clear, well-organized, complete, and easy to follow	Diagram is clear but has minor gaps or inconsistencies	Diagram is somewhat unclear; missing key steps	Diagram is unclear, incomplete, or not submitted
Work Attitude (Patience, teamwork, problem-solving)	Actively collaborates, shows patience, and independently solves problems	Participates well; shows some initiative in solving problems	Limited participation; relies on others for solutions	Poor participation; shows lack of effort or teamwork

Scoring Guide:

- 18–20 points – Outstanding Performance
- 14–17 points – Satisfactory Performance
- 10–13 points – Developing Skills
- 9 points and below – Needs Improvement

LEARNING ACTIVITY SHEET (LAS)

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	9	**Date**	
Lesson Title/Topic:	BIOS and UEFI Configuration		
Name		**Grade & Section**	

I. ACTIVITY NUMBER 1: BIOS AND UEFI CONFIGURATION

II. OBJECTIVES

At the end of the activity, you should be able to:

- Explain the concept and importance of BIOS/UEFI as firmware, including its role in system operation and troubleshooting.
- Apply correct BIOS/UEFI configuration procedures in a guided scenario, and;
- Demonstrate collaboration and technical documentation skills by working in groups to document BIOS/UEFI configuration.

III. MATERIALS

- Lesson Information Sheet (Attached)
- Pen and Paper
- Desktop / Laptop Computer

BIOS/UEFI Configuration

What is BIOS?

The BIOS of "Basic Input Output System" is a firmware program stored on a small memory chip on the motherboard. It acts as the first software that runs when a computer is powered on. BIOS initializes and tests the hardware components (like CPU, memory, and storage devices) and prepares the system to load the operating system from a storage device.

What is UEFI?

The Unified Extensible Firmware Interface or UEFI is a modern replacement for BIOS that provides a more user-friendly interface and advanced features. Like BIOS, it initializes hardware and boots the operating system, but it also supports graphical interface with mouse support, faster boot times, secure boot to prevent unauthorized software from loading, support for larger storage devices (over 2 TB), better security and system management options.

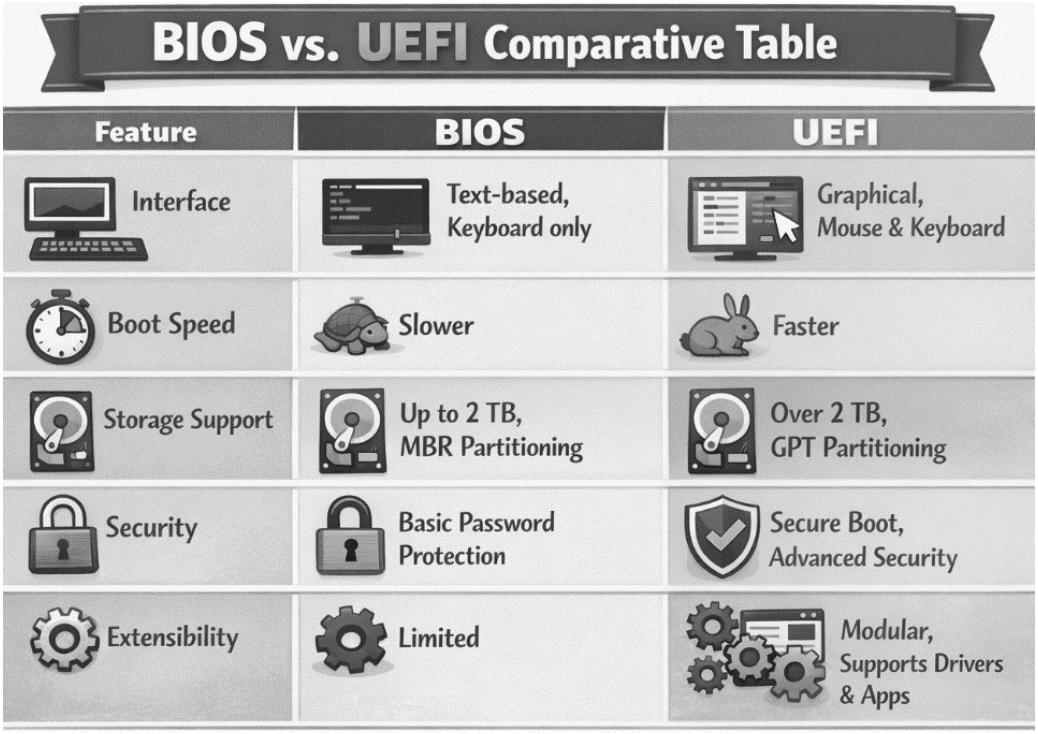


Figure 1: Image generated by OpenAI, May 9, 2026, DALL-E 3

Importance of BIOS/UEFI in Computer Operation

1. Acts as the bridge between hardware and operating systems**.**
2. Allows configuration of essential hardware components like CPU, RAM, storage devices, and peripherals**.**
3. Provides troubleshooting tools like hardware diagnostics.
4. Enables technicians to optimize system performance through settings like boot order, virtualization, and power management.

Real-Life Relevance

Technicians and ICT professionals need to access and configure BIOS/UEFI for several practical reasons:

1. Install Operating System – Adjust boot order to load from USB flash drive /CD/DVD.
2. Troubleshooting Hardware Issues – Identify faulty components during POST.
3. Improving Security – Enable Secure Boot and passwords to prevent unauthorized access.
4. System Upgrades – Configure settings for new CPUs, RAM, or storage devices.
5. Enabling Advanced Features – Virtualization for software testing, overclocking, and power management.

BIOS/UEFI is essential firmware that prepares the computer's hardware and allows the operating system to load properly. Knowing how to configure it is important for tasks like OS installation, troubleshooting, and system optimization.

However, BIOS/UEFI settings are not the same across all computers. Different brands and models use different keys, menus, and procedures. Because of this, users must be adaptable and familiar with various configurations to work effectively on different systems.

Steps in Configuring BIOS/UEFI Setting the Bootable Device (Flash Drive) As First Boot

To further deepen learners understanding, learners may access this video tutorial about configuring the BIOS setup:
https://www.youtube.com/watch?v=RQELd13uxj8
(Kuya Louie/Computer Lesson 101 Tagalog. (2026, May 9). *"How to Configure BIOS/UEFI*]". YouTube. https://www.youtube.com/watch?v=RQELd13uxj8)

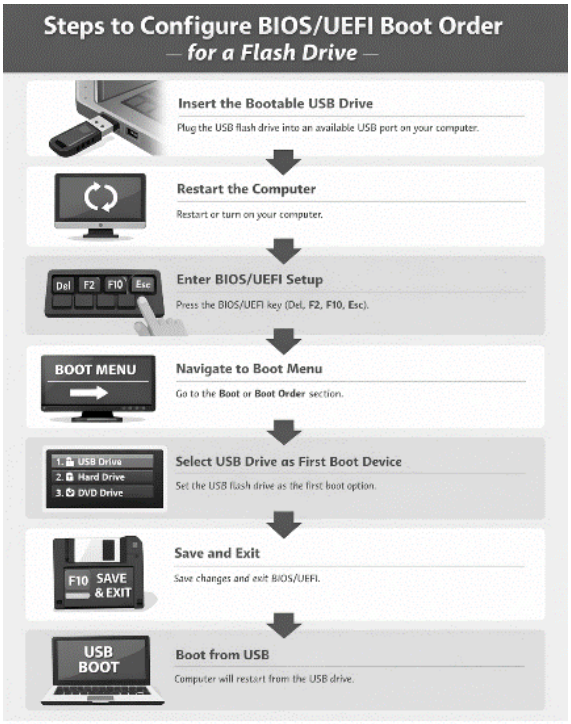


Figure 2: Image generated by OpenAI, May 9, 2026, DALL-E 3

IV. INSTRUCTIONS

ACTIVITY 1: "TELL ME WHAT AND HOW"

Read the given scenario below and answer the following questions.

Scenario:

A school laboratory technician is preparing 10 computers for a software installation. The installer is on USB, some computers have new RAM installed, and the laboratory computers requires virtualization for software testing.

Guide Questions:

1. Which BIOS/UEFI settings must the technician configure to ensure successful software installation?

   _____
   _____
   _____

2. What security settings should be considered to prevent unauthorized software from running?

   _____
   _____
   _____

3. How would changing the boot order help in this scenario?

   _____
   _____
   _____

4. Explain why technicians need to understand BIOS/UEFI when upgrading hardware or installing software.

_____
_____
_____

ACTIVITY 2: DOCUMENTING THE "SETTING UP OF BIOS/UEFI"

1. Form groups composed of 3 to 4 members each. Assign a leader to lead the group, a performer to execute the tasks, a documenter to take note of the group's reports and accomplishments and an encoder.
2. One member will configure BIOS/UEFI settings on a computer.
3. Other members will be assigned to document the steps in configuring the BIOS / UEFI by taking screenshots / pictures and the hardware specification of the computer.
4. The group will prepare a document (preferably in MS Word or Canva) presenting their output.
5. Prepare a presentation report to the class.

PART 1: GROUP COMPOSITION AND FUNCTIONS

No.	Name of Member	Role	Function / Duty
1.			
2.			
3.			
4.			

PART 2: BIOS / UEFI DOCUMENTATION

STEP NUMBER	SCREENSHOT DOCUMENTATION	DESCRIPTION

Note: Add more rows if needed.

ACTIVITY 3: CREATING VISUAL ACTION PLAN

Using skills in flowcharting or algorithm making, learners will be tasked to develop a step-by-step procedure or action plan (1) Configuring the BIOS /UEFI, in a piece of paper or through MS word, Canva and other available tools.

V. SYNTHESIS

In this lesson, we explored BIOS or Basic Input/Output System and UEFI or Unified Extensible Firmware Interface configuration and its important role in preparing a computer system to properly load the operating system and support hardware functions. We learned that BIOS and UEFI both serve as firmware that initializes system components, but UEFI provides more advanced features such as better security, faster booting, and support for modern hardware.

We also understood that the correct configuration of BIOS/UEFI settings such as boot order, security options, and virtualization is essential for successful software installation, troubleshooting, and system optimization. Through activities, we practiced analyzing scenarios, documenting procedures, and creating visual action plans to strengthen our understanding of the step-by-step process.

Overall, we have come to understand that proficiency in BIOS and UEFI configuration is a fundamental skill in computer systems servicing.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	10	**Date**	
Lesson Title/Topic:	Installing Operating System (OS)		
Name		**Grade & Section**	

I. ACTIVITY NUMBER 1: INSTALLING WINDOWS OPERATING SYSTEM

II. OBJECTIVES

At the end of the activity, you should be able to:

- explain the concepts and requirements of operating system installation;
- apply step-by-step procedures in installing operating systems (Windows Server 2012 and Windows 10) through sequencing, simulation, and actual installation, and;
- Demonstrate collaboration, critical thinking, and technical skills by working in learning stations, performing guided installation tasks, documenting procedures, and reflecting challenges encountered during the installation process.

III. MATERIALS

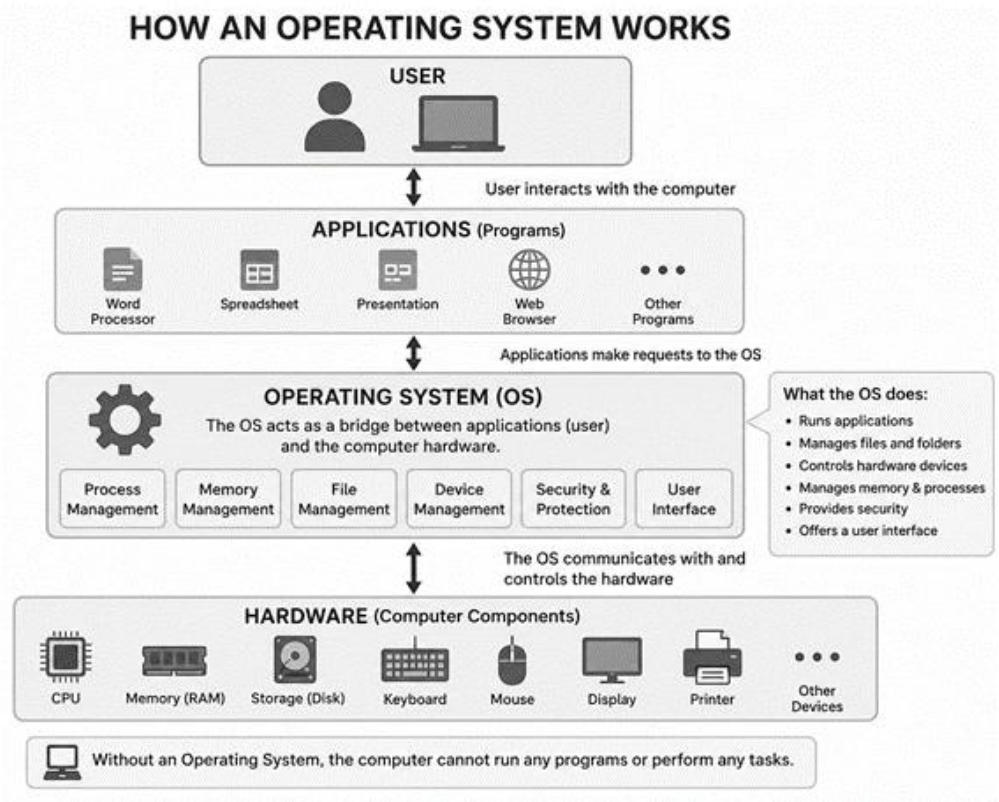
- Lesson Information Sheet (Attached)
- Pen and Paper
- Desktop / Laptop Computer
- Flash Drive with Windows Server and Client Installers, Device Drivers and Application Programs (Microsoft Office)

INSTALLING OPERATING SYSTEM

What is Operating System?

An Operating System or OS is the main software that allows a computer to run and manage all its hardware and other programs. It acts like a bridge between the user and the computer hardware, making it possible to run applications, manage files, and control devices like the keyboard, mouse, and printer.

Common examples of operating systems include Windows, macOS, and Linux. Without an OS, a computer cannot function or run any programs.



What operating system needs to be installed in computers?

In setting up a computer system, there are two computers that needs to be prepared. One computer is intended to serve as the server computer and the other one will serve as the client computer. These computers requires different operating systems to be installed.

Classification of Computer	Operating System / Software to be installed
Server Computer	Windows Server 2012 or higher
Client Computer	Windows 2010 or higher

What are the minimum hardware requirement prior to the installation of Windows Server 2012 for the server computer and Windows 2010 for the server computer?

- At least 1.4 GHz 64-bit processor
- At least 512 MB RAM (2 GB recommended for Server with graphical user interface or GUI)
- At least 32 GB minimum storage

STEPS IN INSTALLING WINDOWS SERVER 2012 FOR SERVER COMPUTER

1. Prepare the bootable installation media (USB/DVD with Windows Server 2012 ISO).
2. Configure the BIOS/UEFI Settings:
   -Enable boot from USB/DVD
   -Disable Secure Boot if using non-signed media (for older systems)
3. Insert the bootable installation media.
4. Restart the computer and enter BIOS/UEFI
5. Change the boot order to boot from USB/DVD first
6. Save and exit BIOS/UEFI
7. Computer boots into the Windows Server 2012 setup.
8. When the Windows Server 2012 setup starts, select your preferred language, time, and keyboard settings, then click Next.
9. Click Install Now to begin the installation process. Choose the edition of Windows Server 2012 you want to install, such as Standard or Datacenter, with or without GUI.
10. Read and accept the license terms, then click Next.
    Select the installation type.
    a. Choose Custom: Install Windows only (advanced) for a fresh installation.
    b. Choose Upgrade if you are upgrading from a previous version of Windows Server.
11. In the partitioning section, select the drive where you want to install the operating system. You may format the drive or create new partitions if necessary.
12. The setup will begin copying and installing files automatically. The computer may restart several times during this process.

STEPS IN INSTALLING WINDOWS 10 FOR CLIENT COMPUTER

1. Prepare Installation Media. Use a bootable USB/DVD with the Windows 10 installer.
2. Configure BIOS/UEFI Settings by setting the computer to boot from the bootable device (USB flash drive or DVD)
3. Restart the computer to launch the “Windows Setup”.
4. Choose language, time, and keyboard settings, then click “Next”.
5. Start Installation. Click “Install Now”.
6. Input the product key or skip this step if it is not available.
7. Accept “License Terms”. Agree to the terms and click “Next”.
8. Choose an Installation Type. Select Custom: Install Windows only (advanced) for a fresh installation.
9. Partition on the Drive. Select, create, or format the drive where Windows will be installed.
10. Wait while files are copied and installed. The computer will restart several times.
11. Configure user account, password, and basic settings (region, network, privacy).

IV. INSTRUCTIONS

ACTIVITY 1: SIMPLIFYING THE STEPS

Rewrite the "Steps in installing Windows Server 2012" by simplifying the procedure and reducing the total number of steps into 5 to 8 steps only.

STEP NUMBER	PROCEDURE / OPERATION
1	
2	
3	
4	
5	
6	
7	
8	

ACTIVITY 2: "WINDOWS 10 INSTALLATION SEQUENCING"

Read each step carefully. Arrange the steps in the correct order by writing numbers 1–10 before each statement. Arrange and understand the correct steps in installing Windows 10.

STEP NUMBER	ACTION / ACTIVITY
	Accept the license terms and click Next.
	Select the drive or partition where Windows will be installed.
	Click "Install Now" to begin the installation.
	Choose the Windows 10 edition (e.g., Home or Pro).
	Set your preferred language, time, and keyboard settings.
	Complete the setup by creating a user account and adjusting system settings.
	Select "Custom: Install Windows only (advanced)" for a clean installation.
	Enter the product key or choose to skip.
	Wait while Windows copies and installs files (system may restart).
	Launch the Windows Setup screen after booting into the installer.

ACTIVITY 3: SOFTWARE INSTALLATION LEARNING STATIONS

Procedure:

1. This activity will require three (3) learning stations. Thus, the class may be divided into three groups. Groupings may be created based on preferred learning styles or on the result of RPL or pre-test.
2. Each group will be assigned to one station and once the task in that particular station is completed, the groups will now transfer to its next station.
3. Steps 1 and 2 repeats until all groups are able to visit all learning stations.

LEARNING STATION 1: Inventory and Computer Specification Stations

Prepare computer and workstation inventory including a list of tools, equipment, and materials to be used. This station also requires identifying the hardware and software specification of the actual computer unit to be used to allow learners to assess if the computer unit met the minimum specification requirements prior to software installation.

COMPUTER DISASSEMBLY INVENTORY

Computer No.:		Technician:	
Owner:		Address:	
Username:		Password:	
Start Date:		End Date:	
Actual Computer Hardware Specification:			

A. TOOLS

Item No.	PARTICULARS (DESCRIPTION)	QUANTITY	STATUS / REMARKS

B. EQUIPMENT AND COMPONENTS

Item No.	PARTICULARS (DESCRIPTION)	QUANTITY	STATUS / REMARKS

C. MATERIALS

Item No.	PARTICULARS (DESCRIPTION)	QUANTITY	STATUS / REMARKS

D. OTHERS

Item No.	PARTICULARS (DESCRIPTION)	QUANTITY	STATUS / REMARKS

E. SAFETY PRECAUTIONS WHILE WORKING WITH COMPUTER

List down the safety precautions while working with computers (disassembly and assembly).

_____
Student Name and Signature
Date: _____

LEARNING STATION 2: Installing Windows Server 2012 for the Server Computer

Following the given procedure or steps, and the Performance Task Sheet, this station requires the complete installation of Windows Server 2012. However, the teacher may add instructions pertaining to "partitioning" or memory allocation. As much as possible, all members in a group must be able to experience actual installation individually or in pair.

ACTUAL HARD DRIVE PARTITIONING FOR SERVER COMPUTER		
DRIVE C:	**DRIVE D:**	**RESERVED PARTITION**

OBSERVATION CHECKLIST (WINDOWS SERVER 2012)

The teacher will give one point for each criteria successfully met by the learner's actual performance during the installation of Windows Server 2012.

No.	CRITERIA Did the learner...	POINT GIVEN	REMARKS
1	Prepared installer, tools, and checked system requirements for Windows Server 2012		
2	Accessed BIOS/UEFI and set correct boot priority		
3	Successfully booted from installation media		
4	Selected correct language, time, and keyboard settings		
5	Chose correct installation type		
6	Performed proper disk partitioning/formatting		
7	Completed OS installation process without major errors		
8	Set up administrator account/password correctly		
9	Verified successful system startup and basic functionality		
10	Documented the installation process (steps/screenshots)		
	TOTAL SCORE:		

LEARNING STATION 3: Installing Windows 2010 for the Client Computer

Following the given procedure or steps, and the Performance Task Sheet, this station requires the complete installation of Windows Server 2012. However, the teacher may add instructions pertaining to "partitioning" or memory allocation. As much as possible all members in a group must be able to experience actual installation individually or in pair

ACTUAL HARD DRIVE PARTITIONING FOR CLIENT COMPUTER		
DRIVE C:	**DRIVE D:**	**RESERVED PARTITION**

OBSERVATION CHECKLIST (WINDOWS 2010)

The teacher will give one point for each criteria successfully met by the learner's actual performance during the installation of Windows Server 2010.

No.	CRITERIA Did the learner...	POINT GIVEN	REMARKS
1	Prepared installer, tools, and checked system requirements for Windows 2010		
2	Accessed BIOS/UEFI and set correct boot priority		
3	Successfully booted from installation media		
4	Selected correct language, time, and keyboard settings		
5	Chose correct installation type		
6	Performed proper disk partitioning/formatting		
7	Completed OS installation process without major errors		
8	Set up administrator account/password correctly		
9	Verified successful system startup and basic functionality		
10	Documented the installation process (steps/screenshots)		
	TOTAL SCORE:		

ACTIVITY 4: THE OPERTING SYSTEM INSTALLATION JOURNEY

Answer the following questions honestly. Write your answer in the space provided.

1. How did working together (or observing others) while installing the operating system (Windows Server 2012 and Windows 10) help you manage tasks more efficiently?

   _____
   _____
   _____
   _____

2. Which step in the software installation process made you feel most responsible for the computer's proper functioning, and why?

   _____
   _____
   _____
   _____

3. What challenges did you face during the installation process, and how did you handle them? What did you learn about staying patient and focused under pressure?

   _____
   _____
   _____
   _____

ACTIVITY 5: FILL-IN-THE-BLANK POEM: INSTALLING OPERATING SYSTEMS

Complete the poem "Boot Up and Shine: The OS Adventure" by identifying and writing the missing words in the blank.

Boot Up and Shine: The OS Adventure

By: IAN JOSEPH C. VELASCO

An _____ helps a computer run,
It manages the hardware and programs for everyone.

Without an OS nothing can start,
No applications open, no files play their part

A _____ shares data far and wide
Windows Server 2012 is installed inside for network service so wise.

A _____ receives tasks with care,
Windows 10 runs smoothly and is ready to share

Bootable _____ make installation fast,
BIOS and _____ guide the process to last.

Language, time, and _____ you must choose,
Then click Install Now and watch the files move.

Partition the _____, create or format as needed,
The OS will copy files and be automatically installed and willed.

The computer may _____ several times,
Until setup is complete and the system operates as desired.

Finally, configure your user account and _____,
Now your computer is ready to work without problems and woes.

V. SYNTHESIS

In this lesson, we learned about the importance of operating systems as the main software that allows a computer to function and manage hardware and applications. We understood the differences between server and client operating systems, as well as the basic hardware requirements needed before installation. We also explored and practiced the step-by-step processes in installing Windows Server 2012 and Windows 10, including BIOS/UEFI configuration, partitioning, and system setup.

Through various activities such as sequencing, simulations, learning stations, and reflection, we were able to apply our knowledge in real or simulated situations. We also realized the importance of teamwork, accuracy, patience, and proper procedure in successfully installing an operating system. Overall, we gained a deeper understanding that installing an OS is a structured process that requires careful planning and correct execution.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	11	**Date**	
Lesson Title/Topic:	Disk Management and Partitioning		
Name		**Grade & Section**	

I. ACTIVITY 1: MASTERING DISK MANAGEMENT & PARTITIONING

II. OBJECTIVES

At the end of the activity, you should be able to:

- accurately compute partition sizes for operating system installation and data storage;
- demonstrate appreciation for proper disk management by recognizing its importance in organizing files, improving computer performance, and ensuring data safety.

III. MATERIALS

- Lesson Information Sheet (Attached)
- Pen and Paper
- Desktop / Laptop Computer

LESSON INFORMATION SHEET 1

What is Disk Management?

Disk Management is a tool or process used to organize, manage, and prepare a computer storage device such as hard drives or SSDs for use, especially during operating system installation.

Importance of Disc Management

1. **Prepares the storage for installation**.
   Disk management allows you to create and format partitions, making the storage ready for installing an operating system.

2. **Organizes data efficiently**
   It divides the disk into sections (partitions), helping users store files in an organized way for easier access and management.



Figure 1: Image generated by OpenAI, May 2, 2026, DALL-E 3

3. Prevents installation errors
Proper partitioning and formatting reduce the chances of errors during operating system installation.

4. Supports system performance
Well-managed disks improve the speed and overall performance of the computer by optimizing how data is stored and accessed.

5. Enables multi-boot systems
Disk management makes it possible to install and run multiple operating systems on one computer by creating separate partitions.

6. Ensures data safety
It helps protect important files by allowing backups, proper partitioning, and recovery options in case of system failure.

PARTITIONING A HARD DRIVE

Partitioning a hard drive means dividing your total storage into smaller sections. The goal is to decide how much space each partition will have. Partitioning with a hard drive means dividing the total storage of a computer into smaller sections called partitions. Each partition acts like a separate storage unit, even though they are all inside one physical drive. The main goal is to allocate or decide how much space each partition will have based on its purpose.

Partitioning with a hard drive is a crucial step before software installation because it organizes storage, ensures successful installation, and helps maintain system performance and data safety.

How to Compute Partitions?

1. Know the total drive size.

- Check your hard drive capacity (example 500 GB or 1 TB)
- 1 TB = 1000 GB (approximate for calculations).

2. Decide the purpose of each partition.

Partition	Purpose	Suggested Size
C:	OS and other programs	100 to 150 GB minimum
D:	Documents and other user data	Remaining Space
Optional	Back-up and recovery	50 to 100 GB

Example: On a 500 GB drive:

- C: 150 GB for OS and programs
- D: 300 GB for data
- Recovery: 50 GB

3. Use the formula:
Partition Size = Total Drive Size × Desired Percentage

Example:

- Total Drive = 500 GB
- OS Partition = 30%
- OS Partition Size = 500 × 0.3 = 150 GB

Remaining 70% → Other partitions (500 × 0.7 = 350 GB)

4. Convert units if needed.

- 1 GB = 1024 MB
- Example: 150 GB × 1024 = 153,600 MB (needed when formatting in MB during Windows setup)

5. Finalize the partitioning.

- Leave extra space for OS updates.
- Don't make the OS partition too small; Windows + programs grow over time.
- Data partition can be larger since user files usually take more space.

A. PARTITIONING DURING WINDOWS INSTALLATION (SETUP STAGE)

1. Open Disk/Partition Screen
   When installing Windows, proceed to the part where it asks: *"Where do you want to install Windows?"*
2. View Available Drives
   You will see a list of existing drives and partitions.
3. Delete Old Partitions (if needed)
   Select unwanted partitions and click Delete to create *Unallocated Space*.
4. Create New Partition
   Select the unallocated space, then click New to create a partition.
5. Set Partition Size
   Enter the size you want for the partition (e.g., for Drive C:).
6. Format the Partition
   Click Format to prepare the drive (usually NTFS file system).
7. Select the Partition
   Choose the formatted partition where Windows will be installed.
8. Proceed with Installation
   Click Next to install Windows on the selected drive.

B. PARTITIONING AFTER WINDOWS INSTALLATION (USING DISK MANAGEMENT TOOL)

1. Open Disk Management Tool
    - Right-click Start Menu
    - Click Disk Management
2. View Disks and Partitions
   You will see all drives, partitions, and available space.
3. Create New Volume
    - Right-click Unallocated Space
    - Select New Simple Volume
4. Set Volume Size
   Specify how much space to use.
5. Assign Drive Letter
   Choose a letter (e.g., D:, E:)
6. Format the Drive
   Select file system (usually NTFS) and complete formatting.
7. Finish Setup
   The new drive is now ready to use.

IV. INSTRUCTIONS

LEVEL 1 ACTIVITY: "PARTITION SIZE COMPUTATION FOR WINDOWS INSTALLATION"

Compute partition sizes for OS and data drives using percentages and total drive sizes. For each scenario, calculate the size of each partition. Show your work. Write your answers in GB (and MB if asked).

1. A computer has a **500 GB hard drive**. You need to allocate:
    - 30% for OS (C:)
    - 70% for Data (D:)

Solution:

Questions:

a. How many GB will the OS partition have? _____

b. How many GB will the Data partition have? _____

2. A computer has a 1 TB (1000 GB) hard drive. You want to create:
    - C: drive for OS = 25%
    - D: drive for Documents and Programs = 60%
    - Recovery drive = 15%

Solution:

Questions:
a. Compute the size in GB for each partition. _____
b. Convert the C: drive size into MB. _____

3. A server computer has a **2 TB (or 2000 GB) hard drive**. The requirements are:
   - OS + Applications = 20%
   - User Data = 50%
   - Backup / Recovery = 25%
   - Future Expansion = 5%

Solution:

Questions:
a. Compute the size of each partition in GB;

- OS + Applications = _____GB
- User Data = _____GB
- Backup / Recovery = _____GB
- Future Expansion = _____GB

b. Convert each partition size to MB.

- OS + Applications = _____ MB
- User Data = _____ MB
- Backup / Recovery = _____ MB
- Future Expansion = _____ MB

c. If the OS partition grows by 10% after updates, what will be its new size in GB?
_____

LEVEL 2 ACTIVITY: "CASE STUDY: FIX THE PROBLEM"

1. Read each scenario, analyze and provide solution for each situation. Refer to the questions given after each scenario to serve as guide in developing your proposed solution.
2. Upon teacher's instruction, share your thoughts to your group and later on to the entire class.

Scenario 1: Slow and Cluttered Computer
A student is complaining that their computer is very slow. After checking, you found out that all files (system files, videos, games, and documents) are stored in only one drive (C: drive). The storage is almost full.

What disk management solution will you apply to improve performance and organize the files properly?

_____
_____
_____

Scenario 2: No Backup Space for Important Files
A school office computer stores all files in one partition. One day, some important documents were accidentally deleted when the system was updated.

How can partitioning help prevent this problem in the future? What changes will you suggest in disk management?

_____
_____
_____

Scenario 3: Installing New Operating System
A technician is about to install a new operating system, but the hard drive has no separate partition for system files and user files. Everything is in one drive.

What steps in disk management should be done before installing the OS to ensure proper setup and organization?

_____
_____
_____

LEVEL 3 ACTIVITY: "COMPUTING ACTUAL DISC ALLOCATION"

Compute the disc allocation for each item.

1. A 500 GB hard drive is divided equally into 2 partitions (C: and D:). How many GB will each partition have?

2. A 1 TB (1000 GB) hard drive is allocated as follows:
   - 300 GB for System (C:)
   - The rest for Data (D:)

How many GB is allocated for the D: drive? _____

3. A 750 GB disk is divided into 3 equal partitions. How much storage will each partition have?

4. A 600 GB hard drive is partitioned as follows:
   C: Drive = 200 GB
   D: Drive = 250 GB

How much unused (free) space remains? _____

5. A technician has a 1 TB (1024 GB) disk and plans the following allocation:
   OS (C:) = 250 GB
   Applications (D:) = 300 GB
   Backup (E:) = remaining space

How many GB will the E: drive have? _____

LEVEL 4 ACTIVITY: "OFFICE COMPUTER AUDIT"

1. Interview 2 personnel in your school that uses an office computer or laptop.
2. Through the interview, you are tasked to identify the following:
   a. If the computer has one or multiple partitions
   b. Approximate storage usage (full, half, or almost full)
   c. Possible improvements in organization
3. Accomplish the report using the template below.

WRITTEN REPORT AND CHECKLIST

COMPUTER 1	COMPUTER 2

V – SYNTHESIS

Through the Learning Activity Sheet, you've gained a deeper understanding of the importance of disk management in preparing, organizing, and protecting computer storage devices. By participating in explicit discussions, hands-on computation activities, case analysis, and real-life computer audits, you were able to connect concepts with actual computer system practices. The activities have helped you develop the knowledge and skills needed to compute partition sizes accurately, allocate storage properly, and understand the role of partitions in operating system installation, system performance, and data safety. The case studies and audit tasks also encouraged critical thinking, collaboration, and problem-solving, analyzed real-world storage issues and proposed practical solutions.

Most importantly, the activities strengthened appreciation of proper disk management as an essential skill in maintaining organized, efficient, and reliable computer systems.

LEARNING ACTIVITY SHEET (LAS)

Learning Area	Computer Systems Servicing		
Learning Activity Sheet	12	**Date**	
Lesson Title/Topic:	Introduction to Computer Testing and Documentation		
Name		**Grade & Section**	

I. ACTIVITY NUMBER 1: COMPUTER TESTING AND DOCUMENTATION

II. OBJECTIVES

At the end of the activity, you should be able to:

- explain the importance of computer testing and documentation in ensuring proper computer functionality, troubleshooting, and maintenance;
- demonstrate appreciation for accurate computer testing and proper documentation as part of responsible and professional work practices, and;
- perform basic computer testing and accomplish a simple documentation or inventory form based on the results of the testing activity.

III. MATERIALS

- Lesson Information Sheet (Attached)
- Pen and Paper
- Desktop / Laptop Computer

COMPUTER TEST AND DOCUMENTATION

Computer test and documentation refer to the process of checking a computer system to make sure it is working properly and then recording the results and procedures for reference.

Computer test is the process of evaluating hardware and software to ensure that everything functions correctly. It may include:

- Checking if the computer turns on properly
- Testing components like keyboard, mouse, monitor, and printer
- Running diagnostic tools to detect errors
- Verifying software installation and system performance

Documentation is the process of writing down or recording all the important details about the computer system and the tests done.

- Test results and findings
- Hardware and software specifications
- Repair or troubleshooting steps done
- Maintenance logs and checklists

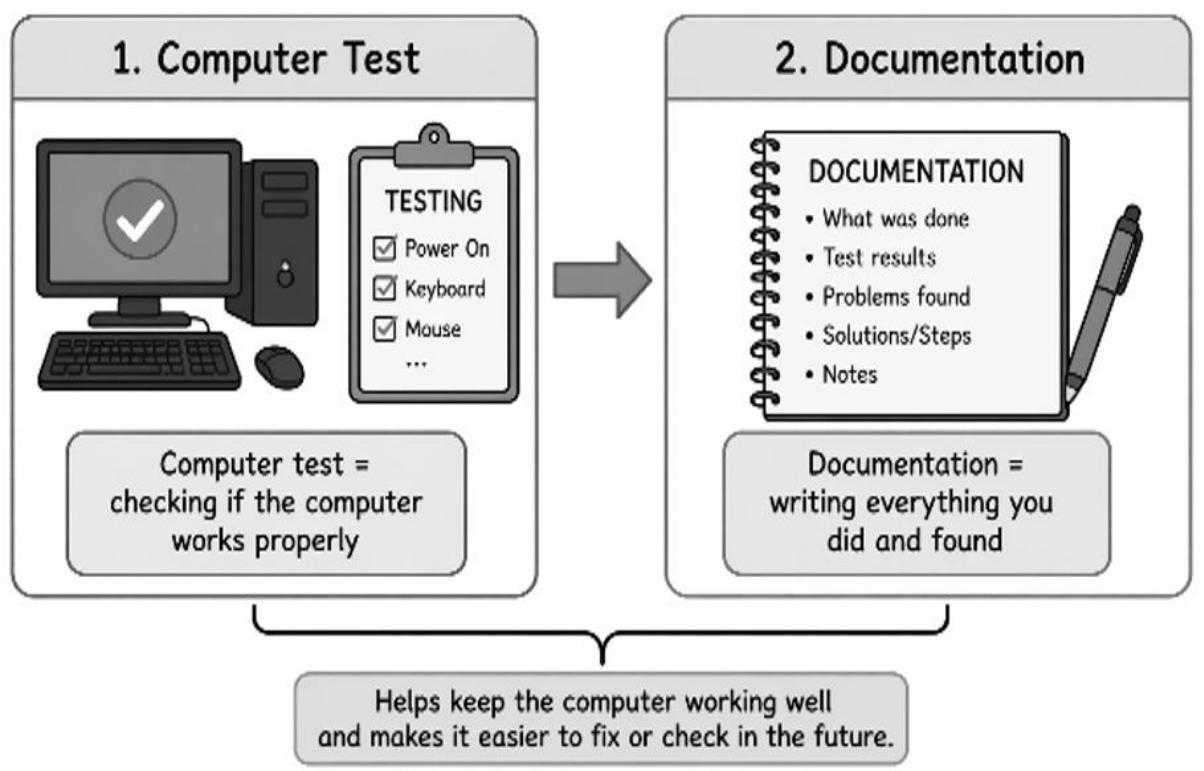


Figure 2: Image generated by OpenAI, May 5, 2026, DALL-E 3

IMPORTANCE OF CONDUCTING COMPUTER TESTING AND DOCUMENTATION

1. **Ensures Proper Functionality**
   Computer testing helps verify if all hardware and software components are working correctly before use.
2. **Detects Errors and Issues Early**
   It allows identification of problems such as faulty hardware, software bugs, or installation errors before they become serious.
3. **Improves System Reliability**
   Regular testing ensures the computer system runs smoothly and consistently without unexpected failures.
4. **Provides Accurate Records**
   Documentation keeps a clear record of all tests performed, repairs made, and changes done to the system.
5. **Helps in Troubleshooting**
   Documented information makes it easier to diagnose and fix future problems quickly.
6. **Supports Maintenance History Tracking**
   It allows technicians or users to track what has been done to the computer over time.
7. **Ensures Professional Practice**
   Proper testing and documentation reflect organized, responsible, and professional IT work.
8. **Saves Time and Cost**
   Early detection of issues and clear records to reduce repeated repairs and unnecessary expenses.

IV. INSTRUCTIONS

The following activities are designed to help you gain understanding, develop appreciation in observing proper documentation practices, and perform accurately basic computer testing and accomplish a simple documentation or inventory.

ACTIVITY 1: "VALUING THE IMPORTANCE OF CONDUCTING COMPUTER TESTING AND DOCUMENTATION"

Read each scenario carefully. If the situation shows the importance of computer testing and documentation, write a ✓ (check) in the space provided. If it does NOT show its importance, write an **X**. Be ready to explain your answer after the activity.

NO.	SCENARIO	ANSWER
1.	The IT staff kept a history of all maintenance activities done on each computer to monitor its condition over time.	
2.	The IT staff kept a history of all maintenance activities done on each computer to monitor its condition over time.	
3.	Carlo immediately used a computer after assembly without testing, which later caused unexpected errors.	
4.	When a computer problem happened again, the technician reviewed previous records to quickly identify the issue.	
5.	A technician fixed a computer but did not write any reports, so no one knew what was repaired.	
6.	After repairing the computer, John wrote down all the actions he performed and the parts he replaced in a logbook.	
7.	A school technician regularly checks and tests all computers in the lab to make sure they run smoothly during classes.	
8.	Ana noticed that her computer was slow, so she ran diagnostic tools and found a faulty RAM before it caused system failure.	
9.	Before using a newly assembled computer, Mark tested all the parts and confirmed that the keyboard, monitor, and system unit were working properly.	
10.	Maria ignored system warnings and continued using her computer until it completely stopped working.	

ACTIVITY 2: "WRITE IT DOWN"

Answer the following questions based on what previously learned in this lesson.

1. How would computer troubleshooting be affected if technicians did not properly conduct testing and documentation?

_____
_____
_____

2. If you were assigned as an IT technician, how would you improve the process of computer testing and make it more efficient and reliable?

_____
_____
_____

3. Why do you think both computer testing and documentation should always go together instead of being done separately?

_____
_____
_____

ACTIVITY 3: "TEST AND DOCUMENTATION SIMULATION"

I. Basic Information

Technician Name	
Date of Setup	
Work Order / Ticket #	
End-User / Department	
Physical Location	
Purpose of Setup	

II. Computer System Inventory

Note: Use the computer built-in testing tool or utility software (Task Manager)

Item	Manufacturer and Model/Serial/Asset Number	Specifications	Status and Remarks	Actions/ Operations Taken
1. System Unit				
2. Monitor(s)				
3. CPU (Processor)				
4. RAM (Memory)				
5. Storage (SSD/HDD)				
6. Graphics Card				
7. Keyboard				
8. Mouse				
Other Peripherals				

III.Software Inventory

Item	Specific Version and Build	Notes (e.g., License Key, Installation Date)	Last Update Date:
Operating System (OS)			
Application Software(s)			
Utility Software(s)			
Critical Drivers Installed			**Driver Versions:**

ACTIVITY 4: "BASIC RECALL: TESTING AND DOCUMENTATION"

Read, analyze and answer the following questions.

Part I – Identification
Identify whether the statement refers to ***a Computer Test*** or ***Documentation.***

1. _____ - Checking if the keyboard is working properly.
2. _____ - Writing down the repair done on a computer.
3. _____ - Running diagnostic tools to detect errors.
4. _____ - Recording test results and findings.

Part II – True or False
Write "True" if the statement is correct and "False" if not.

1. _____ - Computer testing is done only after documentation.
2. _____ - Documentation is not important in troubleshooting.
3. _____ - Testing helps identify computer problems early
4. _____ - Documentation is not important in troubleshooting.

IV. SYNTHESIS

By using this learning activity sheet, we learned that testing a computer system is important to make sure that all hardware and software components are functioning properly. We also understood that documentation is necessary because it keeps accurate records of tests performed, repairs made, and maintenance activities conducted on the computer system. By answering scenarios, reflecting on questions, completing simulation forms, and recalling important concepts, we were able to develop our knowledge and skills in identifying computer problems, performing basic testing procedures, and recording important information properly.

The activities also helped us realize that proper testing and documentation make troubleshooting easier, improve system reliability, and promote responsible and professional ICT practices. Overall, the lesson helped us appreciate the value of organized and accurate computer testing and documentation in maintaining efficient and reliable computer systems.