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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for TLE

Quarter 1
Lesson
1

Lesson Exemplar for TLE Grade 8
Quarter 1: Lesson 1 (Week 1)
SY/TP 2025-2026

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TLE/QUARTER 1/GRADE 8

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners demonstrate an understanding of the tools and equipment in ICT.
B. Performance Standards	The learners create videos with graphics design in a safe and responsible manner
C. Learning Competencies and Objectives	**Learning Competency:** The learners will ● Familiarize themselves with the tools and equipment in ICT. **Learning Objectives:** At the end of the lesson, learners are expected to: 1. Develop the ability to identify various ICT tools and equipment, understand their purposes, and learn the basic functions of each. 2. Gain hands-on experience with ICT equipment, focusing on safe handling and operation according to best practices and manufacturer guidelines. 3. Foster an appreciation for the role of ICT in enhancing work efficiency and problem-solving, leading to a value-driven approach to technology adoption.
D. Content	**Tools and equipment in ICT** ❍ computer programming ❍ visual arts ❍ computer system servicing ❍ telecommunication **Appropriate software applications for specific tasks** ❍ application software ❍ system software
E. Integration	**SGD 4:** Quality Education

II. LEARNING RESOURCES

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Moes, T. (2023, June). What is Software? Everything You Need to Know. Softwarelab.org. https://softwarelab.org/blog/what-is-software/

Rosencrance, L. (2021, March). What is Software? Definition, Types and Examples. TechTarget. https://www.techtarget.com/searchapparchitecture/definition/software

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III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** **1. Short Review** Brainstorming session on the importance of tools and equipment in different fields.  "Construction Work - Carpenter Tools" by Marco Verch  "Agricultural Tools" by Miaow Miaow. Used under CC BY-SA 4.0	**Instructional Materials:** Pictures of various tools and equipment, the teacher may also use realia, if available. Show the images but not limited to the following to the class, and ask the importance of these tools and equipment in what field of specialization(s).

	 "Plumbing Tools" by Digital Buggu. Used under CC BY-NC-SA 2.0  Image from PickPik. Used under PickPik's free license **2. Feedback (Optional)**	
B. Establishing Lesson Purpose	**1. Lesson Purpose** 1. Develop the ability to identify various ICT tools and equipment, understand their purposes, and learn the basic functions of each. 2. Gain hands-on experience with ICT equipment, focusing on safe handling and operation according to best practices and manufacturer guidelines. 3. Foster an appreciation for the role of ICT in enhancing work efficiency and problem-solving, leading to a value-driven approach to technology adoption. **2. Unlocking Content Vocabulary** Solicit Ideas from the learners as the wheel spins, from the selected word. • **Computer** - is a programmable device that stores, retrieves, and processes data. • **ICT** - information and communications technology is the infrastructure and components that enable modern computing. • **Application** - In computing, an application, or app for short, is a software program designed to help a computer user accomplish a task. • **Hardware** - consists of the physical parts of a computer system • **Software** - is a collection of instructions, data, or computer programs used to operate computers and execute specific tasks	At the beginning of the lesson, take a moment to clearly articulate the objectives to the students. This involves explaining what they are expected to learn and achieve by the end of the session https://wordwall.net/resource/72086373 use this link to do the interactive activity. SPIN IT.

C. Developing and Deepening Understanding	**SUB-TOPIC 1: EXPLORING TOOLS AND EQUIPMENT IN ICT** **1. Explicitation** 1. Begin with a brief overview of the importance of ICT in today's world. 2. Ask the students how the various ICT fields use TOOLS and EQUIPMENT. 3. Define and categorize what various tools and equipment mean in the field of ICT. 4. Explain how each of these fields relies on specific tools and equipment. **Common Tools and Equipment used in Computer Programming** 1. <u>Hardware</u> • **Computer:** The primary device used for writing code, running programs, and testing software. • **Desktop or Laptop:** Depending on preference and requirements. <u>2. Software</u> • **Integrated Development Environments (IDEs):** Comprehensive tools that provide editing, debugging, and compilation in one place. *Examples: Visual Studio Code, IntelliJ IDEA, PyCharm, Eclipse, Xcode.* • **Code Editors:** Lightweight alternatives to IDEs for quick coding and scripting. *Examples: Sublime Text, Atom, Notepad++.* • **Version Control Systems (VCS):** Tools to manage changes to source code over time. *Examples: Git, Subversion (SVN), Mercurial.* • **Repositories and Collaboration Platforms:** *Examples: GitHub, GitLab, Bitbucket.* • **Compilers and Interpreters:** Tools that translate code into executable programs. *Examples: GCC (GNU Compiler Collection), Clang, Python Interpreter, Node.js.* • **Debuggers:** Tools to test and debug code. *Examples: GDB (GNU Debugger), LLDB, built-in debuggers in IDEs.* • **Package Managers:** Tools to manage software libraries and dependencies.	The teacher may include images or photos relating to the type of ICT equipment and tools in various fields. The teacher may play this video on YouTube to enhance the understanding of learners about programming, *Video Link:* https://www.youtube.com/watch?v=_j4Lj-BT00g Demonstrate the use of one tool in a practical scenario.

	Examples: npm (Node Package Manager), pip (Python Package Installer), Maven, Gradle, NuGet. ● **Build Automation Tools:** Tools to automate the process of compiling code, running tests, and deploying applications. *Examples: Jenkins, Travis CI, CircleCI, Make, Ant.* <u>Common tools and equipment in Computer Systems Servicing:</u> ● **Hand Tools:** When servicing computers, students need tools like screwdrivers, pliers, and anti-static wristbands. These tools help with hardware installation, repair, and maintenance. ● **Diagnostic Software:** Students can use software tools to diagnose hardware issues, check system performance, and troubleshoot problems. ● **Cable Testers and Multimeters**: These tools help verify cable connections and measure electrical parameters. ● **Cleaning Kits:** Keeping computers dust-free is essential for optimal performance. <u>Common tools and equipment Visual Arts:</u> ● **Digital Cameras and Scanners**: Students can capture images of their artwork or scan traditional artwork to create digital versions. ● **Graphic Design Software (e.g., Adobe Photoshop, Illustrator):** These tools allow students to manipulate images, create digital art, and design graphics. ● **Tablets and Drawing Pads**: Artists can use these devices to create digital illustrations and paintings. ● **3D Modeling Software (e.g., Blender, Autodesk Maya):** For students interested in 3D art and animation. **Telecommunication:** 1. <u>Hardware</u> ● **Modems and Routers:** Devices that modulate and demodulate signals for transmission over telephone lines or cable systems and route data between devices on a network. *Examples: DSL modems, cable modems, wireless routers.* ● **Switches and Hubs:** Networking devices that connect multiple devices within a network, facilitating communication between them.	Start by discussing the importance of safety when handling ICT equipment. Explain the risks associated with static electricity, incorrect handling, and improper use of tools.

Examples: Ethernet switches, network hubs.

- **Repeaters and Extenders:** Devices that amplify or regenerate signals to extend the range of a network.
  Examples: Signal boosters, Wi-Fi extenders.
- **Antennas:** Devices that transmit and receive radio waves for wireless communication.
  Examples: Yagi antennas, parabolic antennas, dipole antennas.
- **Base Stations:** Equipment that connects mobile devices to a network in cellular and radio communication.
  Examples: Cell towers, microcells, femtocells.

2. Software

- **Network Management Software**: Tools for monitoring, managing, and troubleshooting network performance and connectivity.
  Examples: SolarWinds Network Performance Monitor, PRTG Network Monitor, Nagios.
- **Communication Protocols:** Software protocols that define rules for data exchange over a network.
  Examples: TCP/IP (Transmission Control Protocol/Internet Protocol), VoIP (Voice over Internet Protocol), SIP (Session Initiation Protocol).
- **Telephony Software:** Applications for managing voice communication over networks.
  Examples: Asterisk, FreeSWITCH, Skype for Business.

DAY 2

2. Worked Example

Group the learners by 6, let them pick an item below, and answer the selected question by reciting in front to use only 6 words or how many are they in the group.

1. What are the essential tools in ICT?
2. How can ICT tools improve efficiency in tasks?
3. Explain the importance of selecting the right tool for a specific task.

3. Lesson Activity:

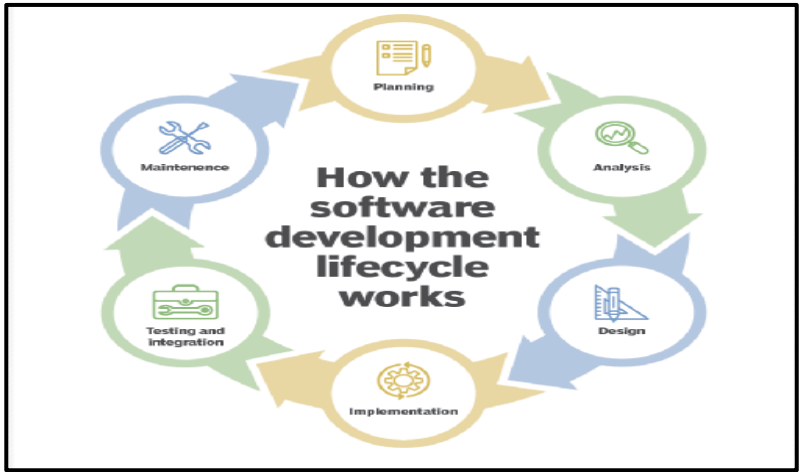
	Refer to learning activity sheet no. 1 for students to accomplish. ***Instructions for Using the Rubric:*** Assess Each Student: Evaluate each student based on the criteria above during the hands-on activity. Assign a score from 1 (Needs Improvement) to 4 (Excellent) for each criterion. Calculate the Total Score: Add the scores for each criterion to get a total score for the student. Provide Feedback: Offer constructive feedback based on the rubric scores, highlighting strengths and areas for improvement. Encourage Improvement: Use the rubric to guide further learning and improvement in safety practices, teamwork, and task completion. **DAY 3** **SUB-TOPIC 2: TYPES OF SOFTWARE** **1. Explicitation** **Definition of Software** Software is a set of instructions, data or programs used to operate computers and execute specific tasks. It is the opposite of hardware, which describes the physical aspects of a computer. Software is a generic term used to refer to applications, scripts and programs that run on a device. It can be thought of as the variable part of a computer, while hardware is the invariable part. The two main categories of software are application software and system software. An application is software that fulfills a specific need or performs tasks. System software is designed to run a computer's hardware and provides a platform for applications to run on top of. 1. **Application software.** The most common type of software, application software is a computer software package that performs a specific function for a user, or in some cases, for another application. An application can be self-contained, or it can be a group of programs that run the application for the user. Examples of modern applications include office suites, graphics software, databases and database management programs, web browsers, word processors, software development tools, image editors and communication platforms. 2. **System software.** These software programs are designed to run a computer's application programs and hardware. System software coordinates the activities and	Use slide decks to present explicitation

functions of the hardware and software. In addition, it controls the operations of the computer hardware and provides an environment or platform for all the other types of software to work in. The OS is the best example of system software; it manages all the other computer programs. Other examples of system software include the firmware, computer language translators and system utilities.

3. **Driver software.** Also known as device drivers, this software is often considered a type of system software. Device drivers control the devices and peripherals connected to a computer, enabling them to perform their specific tasks. Every device that is connected to a computer needs at least one device driver to function. Examples include software that comes with any nonstandard hardware, including special game controllers, as well as the software that enables standard hardware, such as USB storage devices, keyboards, headphones and printers.
4. **Middleware.** The term middleware describes software that mediates between application and system software or between two different kinds of application software. For example, middleware enables Microsoft Windows to talk to Excel and Word. It is also used to send a remote work request from an application in a computer that has one kind of OS, to an application in a computer with a different OS. It also enables newer applications to work with legacy ones.
5. **Programming software.** Computer programmers use programming software to write code. Programming software and programming tools enable developers to develop, write, test and debug other software programs. Examples of programming software include assemblers, compilers, debuggers and interpreters.

How does software work?
All software provides the directions and data computers need to work and meet users' needs. However, the two different types -- application software and system software -- work in distinctly different ways.

The dimensions of software quality include the following characteristics:



https://www.techtarget.com/searchapparchitecture/definition/software#:~:text=An%20application%20is%20software%20that,to%20run%20on%20top%20of

Show a video on how to install Windows 10, if there is no resource available or use a virtual box instead.
https://www.youtube.com/watch?v=nbGkPYtXtmA&t=60s

1. **Accessibility.** The degree to which a diverse group of people, including individuals who require adaptive technologies such as voice recognition and screen magnifiers, can comfortably use the software.
2. **Compatibility.** The suitability of the software for use in a variety of environments, such as with different OSes, devices and browsers.
3. **Efficiency.** The ability of the software to perform well without wasting energy, resources, effort, time or money.

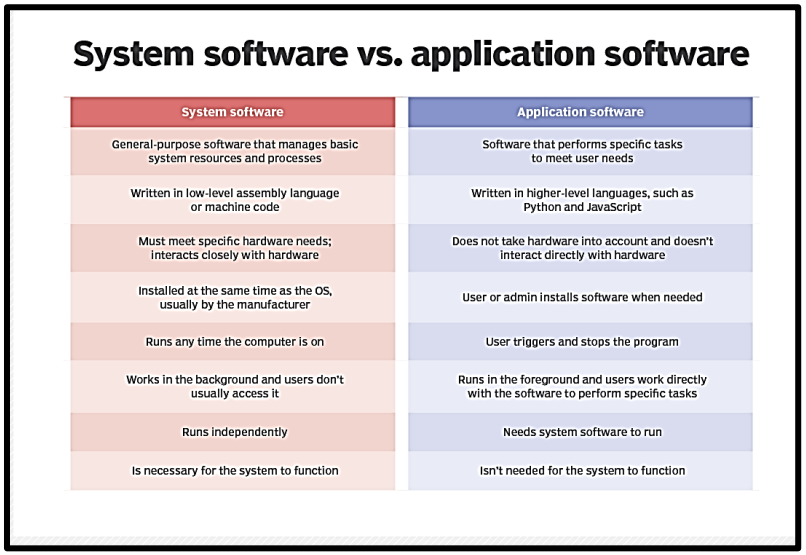


Image sourced from TechTarget

4. **Functionality.** Software's ability to carry out its specified functions.
5. Installability. The ability of the software to be installed in a specified environment.
6. **Localization.** The various languages, time zones and other such features a software can function in.
7. **Maintainability.** How easily the software can be modified to add and improve features, fix bugs, etc.
8. **Performance.** How fast the software performs under a specific load.
9. Portability. The ability of the to be easily transferred from one location to another.
10. **Reliability.** The software's ability to perform a required function under specific conditions for a defined period of time without any errors.
11. **Scalability.** The measure of the software's ability to increase or decrease performance in response to changes in its processing demands.
12. **Security.** The software's ability to protect against unauthorized access, invasion of privacy, theft, data loss, malicious software, etc.
13. **Testability.** How easy it is to test the software.
14. **Usability.** How easy it is to use the software.

2. Worked Example

1. Operating System (OS)

Example: Installing a new application on Windows 10.

Step 1: Download the installation file for the application.
Step 2: Double-click the downloaded file to begin the installation process.
Step 3: Follow the on-screen instructions to complete the installation.
Step 4: Once installed, you can find the application in the Start Menu and run it.

2. Application Software

Example: Creating a presentation in Microsoft PowerPoint.

Step 1: Open PowerPoint and select a template or create a new blank presentation.
Step 2: Add new slides and input content such as text, images, and videos.
Step 3: Apply transitions and animations to enhance the presentation.
Step 4: Save the presentation and practice your slideshow.

3. Utility Software

Example: Running a disk cleanup on a computer.

Step 1: Open the Disk Cleanup utility from the Start Menu.
Step 2: Select the drive you want to clean up and click "OK".
Step 3: Check the boxes for the types of files you want to delete and click "OK".
Step 4: Confirm the action and wait for the cleanup to finish.

DAY 4

3. Lesson Activity: Software Exploration Quest
(Refer to learning activity sheet no. 2 for students to accomplish)

Answer key:

1. System
2. Application
3. Utility
4. Custom
5. Language Processor
6. General Purpose
7. Firmware
8. Device Driver

D. Making Generalizations	**1. Learners' Takeaways** 1. An example of a portable computing device often used for presentations and note-taking is a _____ 2. A _____ is a device used to display visual information from a computer. 3. An example of a piece of hardware that connects to a computer for inputting data is a _____. 4. A commonly used source control tool for managing code repositories is _____. 5. A popular software used for digital illustration and painting is _____. **2. Reflection on Learning** ● Ask the learners about their understanding of the topic(s) presented by making a KWL chart. Supply the blank sheet for each learner and let them write and put emojis on what they feel after the lesson.	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment: Multiple choice Quiz** 1. Which of the following is an example of an Integrated Development Environment (IDE)? A) Visual Studio Code B) GitHub C) Windows File Explorer D) Google Chrome 2. Which of these tools is used for version control in programming projects? A) Git B) Python C) PyCharm D) MySQL 3. What is the main purpose of a virtual machine in software development? A) To create isolated environments for testing and deploying software B) To compile code into machine language C) To share code repositories online D) To design 3D models	**Answer Key:** 1. A 2. A 3. A 4. A 5. B 6. C 7. C 8. A 9. B

	4. In computer systems servicing, which of the following tools is used to diagnose hardware issues? A) Diagnostic software B) Anti-static wristbands C) Cleaning kits D) Cable testers 5. Which tool would you use to measure electrical parameters like voltage or resistance? A) Pliers B) Multimeter C) Cleaning kit D) Screwdriver 6. What is the primary purpose of graphic design software like Adobe Photoshop? A) To test and debug software code B) To compile code into machine-readable format C) To manipulate images and create digital art D) To diagnose computer hardware issues 7. Which of these tools is typically used in visual arts for creating digital illustrations and paintings? A) Routers and switches B) Email and instant messaging C) Tablets and drawing pads D) Screwdrivers and pliers 8. What is the main function of networking equipment like routers and switches? A) To manage data traffic over networks B) To clean and maintain computer systems C) To create virtual machines for software testing D) To provide an integrated environment for programming 9. Which of the following is a common video conferencing tool used for virtual meetings? A) Microsoft Word B) Zoom C) Adobe Photoshop	10.B

	D) PyCharm 10. Which of the following describes the use of online code repositories like GitHub and GitLab? A) To compile and debug code B) To share code and collaborate with other developers C) To design and create 3D models D) To measure electrical parameters **2. Homework** ● ***Research:*** Begin by researching different types of software. Use reliable sources such as academic journals, textbooks, and educational websites. ● ***Analysis:*** Analyze the functions and applications of each software type. ● ***Reflection:*** Reflect on how each type of software impacts your daily computer use. ● **Tasks:** 1. Write a brief description of each type of software listed below. 2. Provide real-world examples of each software type. 3. Discuss how each software type has evolved over time and its future prospects. ● **Types of Software:** 1. System Software 2. Application Software 3. Utility Software 4. Custom Software 5. Language Processor Software 6. General Purpose Software 7. Firmware 8. Device Driver Software			
B. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	The teacher may take note of some observations related to the effective practices and problems encountered after utilizing the different strategies,
	strategies explored			
	materials used			

	learner engagement/ interaction			materials used, the earner engagement and other related stuff. Teachers may also suggest ways to improve the different activities explored.
	others			
C. Teacher's Reflection	*Reflection guide or prompt can be on:* ▪ *principles behind the teaching* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* ▪ *students* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *ways forward* *What could I have done differently?* *What can I explore in the next lesson?*			Teacher's reflection in every lesson conducted/facilitated is essential and necessary to improve practice. You may also consider this as an input for the LAC/Collab sessions.