INFORMATION TECHNOLOGY SUPPORT SERVICE

Level II

Learning Guide # 19

Unit of Competence:-	Administer Network Hardware and Peripheral
Module Title:-	Administering Network Hardware and Peripheral
LG Code:-	ICT ITS1 M06 LO2
TTLM Code:-	ICT ITS1 TTLM06 1019

LO2: Obtain required peripheral

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:-

- Obtaining a peripheral
- Hardware inventories
- Checking contents
- Storing peripherals
- Storing consumables

This guide will also assist you to attain the learning outcome stated in the cover page.

Specifically, upon completion of this Learning Guide, you will be able to:-

- Peripherals are obtained under instruction from appropriate person.
- Peripherals are entered into equipment inventory according to organizational standards.
- Contents of delivered components and physical contents that match the packing list are validated and resolved discrepancies if necessary.
- Peripherals are stored according to vendor/manual guidelines.

Learning instruction:

1. Read the specific objectives of this Learning Guide.
2. Follow the instruction describe below
3. Read the information written in the information "sheet 1, sheet 2,sheet 3 and sheet 4" , "in page 3.4.5.6.8.10.11.13,14,15,16,and 17 " respectively
4. Accomplish the "self-check 1, self-check 2,self-check 3,self-check 4," "in page 7,12,14,and 18" Respectively

*Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory you can proceed to the next topic.

2.1. Obtaining peripherals under instruction

The first step in obtaining a peripheral device is to locate suppliers of that device. Then, there are factors you need to consider about the supplier and the devices on offer, such as support provided and purchase price. This will help you to compare and choose the most appropriate supplier and the exact model of the device according to client requirements. Finally, you are ready to place an **order** for your organisation or client to purchase the device.

Locating a supplier:- There are many ways to find a supplier of peripheral equipment. Some ways include:

Searching the Internet

The Internet provides different methods for searching for suppliers. Using search engines such as *Google* or *Yahoo* can help you find a hardware supplier anywhere in the world. Suppliers will often have their own websites that can provide you with catalogues of available equipment. Other ways to investigate suppliers are to follow links from a website such as a manufacturer's website, or to browse website directories that may be linked to search engine home pages.

PC magazines

Computing magazines often contain a large section devoted to advertising current hardware suppliers.

Newspapers

Major newspapers have computer/IT sections or classified advertisements which can be a source for finding suppliers.

Brochures/advertising material

Many larger hardware suppliers use television, radio or leaflet deliveries to inform potential customers of their latest hardware.

Telephone directory: - A telephone directory is useful if you need to find a hardware supplier located within your local area.

Contacting the manufacturer directly

Manufacturers generally have their own websites. These may list major suppliers in your area. Emailing or telephoning the manufacturer may also be a way to find out names of local suppliers.

Choosing a supplier

With so many choices of suppliers available, how do you find the right one? There are a few factors to consider:

- **How long has the supplier been operating?** It is a good idea to find a supplier who will still be around for the lifetime of the hardware.
- **Does the supplier offer suitable support and training?** If the client will be requiring a lot of additional assistance, training could be a major contributing factor for choosing a particular supplier.
- **Does the supplier offer competitive pricing?** Considering the support and stability, it is also important to weigh up these factors in relation to price. For a client with a strict budget, price may be a big issue when determining where to purchase hardware.
- **Is the supplier a preferred supplier for your organisation?** Some organisations have arrangements that equipment must be purchased from suppliers who are considered to be the preferred provider for the organisation. Organisations create these agreements because customer loyalty offers substantial discounts, extended warranties and additional support.

Selecting a peripheral

Once you have selected suitable suppliers you need to contact each supplier. Information you should find out from the supplier includes:

- model and manufacturer names of peripherals that will satisfy the majority of your clients requirements (including system specifications, physical dimensions, support)
- price of each model
- Availability of each model.

You may find it helpful to keep a record of any details that you collect so you refer to this information quickly and easily.

Placing an order

Depending on the type of organisation you work for, placing an order for a hardware peripheral device could be done in a variety of ways. In a small organisation you may be responsible for ordering the device yourself. However, in a larger organisation there may be employees who are responsible for purchasing new equipment. You may need to fill out an **order form** that can be given to the purchasing department.

Before an order is submitted, it could also be necessary to obtain final approval from senior staff. Often an order form might require signatures from the manager or supervisor before it can be processed. A purchasing department might require **written quotes** from **three suppliers**, a **recommendation** and **justification** for the chosen supplier.

Make sure that you find out from your supervisor or manager what procedures you need to follow when placing an order within your organisation.

Sample order form

From   _____
Date   _____

Code	Quantity	Description	Price	Supplier: name and telephone

COST	
GST	
TOTAL	

Delivery point _____
Budget holder's signature   _____

Please return to the Purchasing Department

Name:_____   Date:_____

Direction: Choose the best answer for the following question, if you have some clarifications – feel free to ask your teacher.

1. The first step in obtaining a peripheral device is?
    A. Locate suppliers
    B. Placing an ordered
    C. Selecting
    D. All

2. Which of the following is locating of supplier?
    A. Searching in internet
    B. News paper
    C. Contacting the manufacturing directly
    D. All

3. Factor of considering choosing a supplier?
    A. Telephone directory
    B. Does the supplier offer suitable support and training
    C. Contacting the manufacturing directly
    D. Placing an ordered

4. Information you should find out from the supplier is
    A. Selecting a peripheral
    B. Written quotes from three suppliers
    C. Model and manufacturer names of peripherals that will satisfy the majority of your clients requirements
    D. All

Note: **Satisfactory rating - 3 points   Unsatisfactory - below 3 points.**

2.2 Entering peripherals into equipment inventory

Hardware inventories

The purpose of a hardware inventory (or registry) is to keep detailed information about all the hardware equipment within an organisation. Every piece of hardware, including each computer and peripheral device, should be recorded on the inventory. As well as providing an excellent quick reference guide to the organisation's hardware, an inventory can be very useful for insurance, warranty and service purposes.

In order for an inventory to be a valuable source of information, it is vital that the information be maintained regularly. New devices need to be entered into the inventory as soon as they have been obtained.

There are a number of tools available to create hardware inventories. Databases and spreadsheets are often used to store the information. There are also software programs that you can purchase, designed specifically for recording hardware and software details.

Details that should be included within a hardware inventory include:

- description of hardware device
- manufacturer
- supplier
- model number
- number and identity of authorised users

- serial number
- warranty or maintenance conditions
- components
- location
- purchase price
- date of purchase

Documenting peripherals used with each computer

If the peripheral is an essential part of the computer system (for example mouse, keyboard or monitor) it is logical to record information about the device within the documentation for the computer

to which it is connected. Individual computer inventories will often contain detailed information about the computer's related hardware and software. It may also be more practical to record information about the peripheral inside the computer's record, if the device is also permanently connected to a computer (for example a printer or scanner).

Hardware inventory (Example 1)

Details for Administration Computer

Manufacturer:	Dell		
Model:	OptiPlex GX280MT Minitower—Power	**Monitor:**	Dell UltraSharp™ 1905FP flat panel,
Operating System:	Windows XP	**Printer:**	HP LaserJet IID
Serial number:	12345	**Keyboard:**	Dell USB keyboard
RAM:	128 Mb	**Pointing device:**	Dell USB 2-button optical mouse with scroll
Hard disk space:	160 Gb		

Individually documenting each peripheral device

If the device is shared between several computers, it makes more sense to keep information about the peripheral as an individual entry in an inventory. Devices such as digital cameras, data projectors and USB drives would more likely to be used by many computers, thus it would make more sense to record their details separate to the computer details.

Hardware inventory (Example 2)

Hardware Inventory Sample

Serial Number	1001
Hardware Device Description	Laser Printer
Manufacturer	Hewlett Packard
Model	Laserjet 1010
Supplier	Harris Technology
Date of Purchase	5/12/2004
Purchase Price	$375.00
Warranty Expiry Date	5/12/2005

2.2.1 **Workstations**: - is a special computer designed for technical or scientific applications, **workstations** offered higher performance than mainstream personal computers, especially with respect to CPU and graphics, memory capacity, and multitasking capability.

2.2.2 Server

A **server** is a computer, a device or a program that is dedicated to managing **network** resources. There are a number of categories of **servers**, including print **servers**, file **servers**, **network servers** and database **servers**. In theory, whenever computers share resources with client machines they are considered **servers**.

2.2.3 Modems or other connectivity devices

Broadband **Modems** Cellular **modems** are **a** type of digital **modem** that establishes internet **connectivity** between **a** mobile **device** and **a** cell phone **network**. The word **modem** is **a** mash up of the term modulation/demodulation, which is the technical term for the conversion between digital and analog signals.

2.2.4 Printers, hard drives, monitors

A peripheral is a "device that is used to put information into or get information out of the computer." Output, which provides output to the user from the computer (**monitors**, **printers**, etc.) Storage, which stores data processed by the computer (**hard drives**, flash **drives**, etc.)

2.2.5 Switches

A network switch is networking hardware that connects devices on a computer network by using packet switching to receive, and forward data to the destination device. A network switch is a multiport network bridge that uses media access control addresses to forward data at the data link layer of the OSI model.

2.2.6 Hubs

A **hub**, also called a **network hub**, is a common connection point for devices in a **network**. **Hubs** are devices commonly used to connect segments of a LAN. The **hub** contains multiple ports. When a packet arrives at one port, it is copied to the other ports so that all segments of the LAN can see all packets.

2.2.7 Bridge

A network bridge is a computer networking device that creates a single aggregate network from multiple communication networks or network segments. This function is called network bridging. Bridging is distinct from routing.

2.2.8 Router

A **router** is a device that forwards data packets along **networks**. A **router** is connected to at least two **networks**, commonly two LANs or WANs or a LAN and its ISP's **network**. **Routers** are located at gateways, the places where two or more **networks** connect.

2.2.9 Firewall

A **firewall** is a system designed to prevent unauthorized access to or from a private **network**. You can implement a **firewall** in either hardware or software form, or a combination of both. **Firewalls** prevent unauthorized internet users from accessing private networks connected to the internet, especially intranets.

Direction: **filling** the appropriate answer for the following question in the specie provided, if you have some clarifications- feel free to ask your teacher.

1. _____ is a device that forwards data packets along networks.
2. _____ is a computer networking device that creates a single aggregate network from multiple communication networks or network segments.
3. _____ is a common connection point for devices in a network.
4. _____ is a system designed to prevent unauthorized access to or from a private network.
5. _____ is a multiport network bridge that uses media access control addresses to forward data at the data link layer of the OSI model.
6. _____ is a device that is used to put information into or get information out of the computer.
7. _____ is a computer, a device or a program that is dedicated to managing network resources.
8. _____ is a special computer designed for technical or scientific applications.

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points.**

2.3 Validating delivered component and physical content

Checking contents

When **unpacking** any peripheral device, an organised and methodical approach needs to be taken. Randomly ripping open boxes and packaging without carefully identifying each component can potentially cause many problems later on.

Prepare a **suitable work area** before you begin unpacking. This should include a large sturdy flat area with no carpet so that small components will not be lost.

Before commencing to open any packaging, find the **manual** for the device. **Check instructions** for any precautions or specific unpacking procedures. Most manuals will also contain a section that tells you a list of included components. It is useful to create a **checklist** based on the component list. You will then be able to use the checklist to mark off the components when they have been identified.

Below is a sample checklist for a typical inkjet printer.

- printer
- cartridge
- power cable
- USB cable
- sample paper
- feeding device
- CD driver

Be attentive when unpacking a peripheral device — handles the packaging and contents with care, as you do not want to damage your new device. Remove any packing material surrounding and also within the device. Some printers, for example, have soft foam and plastic pieces inside the device to ensure that parts are locked into the correct position. Make sure that you remove these pieces and foam before installation.

Self Check 3	Written Test

Name:_____ Date:_____

Direction: Write **TRUE** If the Statement Is Correct**, FALSE** If It Is Incorrect, if you have some clarifications – feel free to ask your teacher.

1. _____ Packaging without carefully identifying each component can potentially cause many problems later on.
2. _____ Prepare a suitable work area before you begin unpacking.
3. _____ to open a new packing device doesn't need any manuals.
4. _____ a power cable is one sample cheek of a printer device.

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points.**

2.3 Storing peripherals

Storing peripherals

Peripheral devices need to be located in a suitable environment — otherwise there may be potential problems. It is a good idea to refer to the manufacturer's manual to determine what guidelines should be followed. When storing peripherals it is important to:

- make sure equipment is kept in ideal working conditions
- adhere to current Occupational Health and Safety guidelines
- ensure the electrical safety of the device
- Consider security of the device.

Keeping equipment in ideal working conditions

Each manufacturer will have their own recommendations on how to store their peripheral equipment. In order to guarantee that a peripheral will function correctly throughout its life it is important to follow guidelines that have been recommended by the manufacturer. Some common recommendations may include:

- **Keep equipment in the correct position**: - after unpacking, most devices will usually have a proper resting position. If a device is not kept in its natural position, there could be problems when trying to operate the device later on. For example, when a printer is stored in a vertical position, components such as the ink cartridges could leak or be dislodged.

- **Keep equipment away from weather, dust and other harmful material**: - When finding a storage location, consider what kind of elements the device may be subjected to. If, for example, you store a USB drive in a cabinet next to chalk, dust from the chalk could potentially damage the storage device's USB connection.

- **Do not expose equipment to extreme temperatures and high humidity**: - Sudden changes in temperature can cause condensation in many peripheral devices. For instance, if a video camera is taken from a cold place to a warm place, condensation may form on the lens and internal parts.

- **Avoid storing the device in direct sunlight**: - Exposure to direct sunlight could damage many of the external components of a device as well as subject the device to high temperatures.
- **Do not expose equipment to water or moisture**: - If water gets inside many peripheral devices there is a risk of electric shock.

Adhering to OH&S guidelines

When positioning peripherals in their permanent locations it is important to take into account many OH&S considerations as follows.

Positioning of the monitor

It is essential to position a monitor correctly to ensure it will suit the needs of the user. Tips include:
- Try to make sure that monitor is in a position away from the glare of sunlight.
- Check that the brightness and contrast controls of the screen have been adjusted to suit lighting conditions in the room.
- The top of the screen should be the same level as the user's eye level.

Positioning of the keyboard

A keyboard also needs to be positioned carefully to be of adequate comfort and safety for the user. Some tips include:
- Position the keyboard directly in front of the monitor and at the same height as the mouse.
- The keyboard should allow the user's forearms to be parallel to the floor.
- Allow space for the computer user to rest their wrists.

Positioning of other equipment

Some general Occupational Health and safety guidelines to consider when positioning other peripheral equipment are:

- Make sure that you can reach the peripheral device and its components without having to strain your back.

- Place equipment such as scanners and printers at a suitable height so a user is easily able to reach paper trays, open scanner lids, etc.

- Make sure that equipment such as speakers is easily accessible if settings such as volume control need to be changed.

Ensuring electrical safety

Some tips to ensure electrical safety are:

- Do not be tempted to add too many extension cables or double socket adapters to your existing electrical sockets.

- Never use damaged plugs or leads.

- If possible, ask an electrician to check the safety of your system.

- Position electrical leads where they will not cause tripping hazards to people.

Physical security of devices

In many situations it is important to consider the physical security of the peripheral devices. Some devices, such as digital cameras, data projectors and USB drives, may not be permanently connected to a computer so it will be necessary to find a secure location to store the device. Make sure that these kinds of devices are secured in a lockable storage cupboard, cabinet or safe when not required. Some organizations install security devices onto desks to guarantee that computers are secure and will not be able to be taken from their position unless unlocked.

Self Check 4	Written Test

Name:_____ Date:_____

Directions: Match **column A** with the correct answer on **column B**, write only the letter of answer on the blank provided at the right side of the test paper.

Column "A"

1. _____ Peripheral devices
2. _____ Ideal working conditions
3. _____ Positioning of the monitor
4. _____ Positioning of the keyboard
5. _____ Physical security of devices

Column "B"

A. Away from the glare of sunlight
B. Adequate the comfort and safety
C. Digital cameras & USB derives
D. Locate in a suitable environment
E. Dust and other harmful material

Note: **Satisfactory rating - 3 points**   **Unsatisfactory - below 3 points.**

List of reference material

1. Book
   - beginners-intro-email-part1
   - Computer Hardware_ Hardware Components and Internal PC Connection
   - Computer Networking & Hardware Concepts

2. Web adders links
   - www.wikipidia.com
   - www.google.com
   - web1.keira-h.school.nsw.edu.au/faculties/IT/

Note: Satisfactory rating – points above / Unsatisfactory – below points. **You can ask you teacher for the copy of the correct answers**