Lesson Plan

Course Title: Computer Maintenance I

Session Title: Printers

Performance Objective:

Upon completion of this assignment, the student will be able to further understand the importance of a printer, will understand the way different types of printers work, and will be able to perform general printer troubleshooting.

Specific Objectives:
- Define the term printer.
- Identify the different types of printers.
- Describe how printers work.
- Learn how to connect a printer.
- Learn how to set up and troubleshoot a printer.
- Identify strategies for choosing a printer.

Preparation

TEKS Correlations:

This lesson, as published, correlates to the following TEKS. Any changes/alterations to the activities may result in the elimination of any or all of the TEKS listed.

125.46(c)(1)(D)
apply the competencies related to resources, information, systems, and technology in appropriate settings and situations;

125.46(c)(1)(E)
demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations;

125.46(c)(2)(C)
estimate supplies, materials, and labor costs for installation, maintenance, and repair work orders;

125.46(c)(3)(A)
demonstrate knowledge of the fundamentals of microcomputers, microprocessor theory, and logic;

125.46(c)(3)(D)
demonstrate knowledge of the relationships of data-communications theory

125.46(c)(3)(E)
demonstrate knowledge of the architecture of a computer system;

125.46(c)(3)(F)
demonstrate knowledge of central processing units (CPU), storage devices, and peripheral devices;

125.46(c)(4)(A)
safely use hand and power tools and equipment commonly employed in computer technologies;

125.46(c)(4)(B)
properly handle and dispose of humanly and/or environmentally hazardous materials used in computer technologies;
125.46(c)(4)(C)
demonstrate knowledge of new and emerging technologies that may affect the field of computer technology;
125.46(c)(5)(C)
identify the basic operational features and proper terminology related to computer systems;
125.46(c)(5)(E)
troubleshoot computer peripheral and communication devices;

Interdisciplinary Correlations:
This lesson, as published, correlates to the following TEKS. Any changes/alterations to the activities may result in the elimination of any or all of the TEKS listed.

<u>Technology Applications - Computer Science I:</u>

- **126.22(c)(1)(A)**
  ...demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components...
- **126.22(c)(1)(B)**
  ...compare, contrast, and appropriately use the various input, processing, output, and primary/secondary storage devices...
- **126.22(c)(3)(A)**
  …discuss copyright laws/issues and model ethical acquisition and use of digital information, citing sources using established methods…
- **126.22(c)(3)(B)**
  …demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet…
- **126.22(c)(4)(A)**
  …use local area networks (LANs) and wide area networks (WANs), including the Internet and intranet, in research and resource sharing…
- **126.22(c)(4)(B)**
  …construct appropriate electronic search strategies in the acquisition of information including keyword and Boolean search strategies…

<u>English:</u>

110.xx(6) - Reading/vocabulary development

- **110.xx(6)(A)**
  ...expand vocabulary through wide reading, listening, and discussing...
- **110.xx(6)(B)**
  ...rely on context to determine meanings of words and phrases such as figurative language, idioms, multiple meaning of words, and technical vocabulary...

110.xx(7) - Reading/comprehension

- **110.xx(7)(A)**

> ...establish a purpose for reading such as to discover, interpret, and enjoy...
> ▪ **110.xx(7)(I)**
> ...use study strategies such as skimming and scanning, note taking, outlining, and using study-guide questions to better understand texts...
> ▪ **110.xx(7)(J)**
> ...read silently with comprehension for a sustained period of time...

Instructor/Trainer

References:
PC Upgrade and Repair Simplified 2nd Edition
How Computers Work; Ron White
CompTIA A+ Certification Instructors Edition

Instructional Aids:
1. Printers PowerPoint Presentation
2. Printers PowerPoint Presentation - Slides
3. Printers PowerPoint Presentation - Handouts
4. Printers PowerPoint Presentation – Notes Pages
5. Printers - Exam
6. Printers - Exam Key

Materials Needed:

None

Equipment Needed:

1. Projection system to play PowerPoint presentation
2. Personal Computer with access to the Internet

Learner

Students should read appropriate curriculum material for on printers, depending on the text/ curriculum being used for this course. This lesson can be taught with only the PowerPoint presentation, and the equipment needed outlined above.

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Introduction

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Introduction (LSI Quadrant I):
  • **SAY:** Often it is necessary to have a hard copy of a document. This is where printers come in.
  • **ASK:** How many printers are located in this room? How many do you think are located in the school?
  • **SAY:** There are several types of printers that exist.
  • **ASK:** What types of printers do we have at school that you know of? (*inkjet, laser*)
  • **ASK:** What types of printers do you have at home?
  • **ASK:** Are there any other types of printers that you have seen? Where did you see them? What output did they produce?
  • **ASK:** How does the output differ from printer to printer? Why would it be important to have different types of printers in different places?

• **SAY:** Today we are going to answer these questions. We will discuss the broad categories of printers, the specific types of printers typically found on the market, and the various types of outputs associated with each so that you are able to make informed decisions about the type of printer to purchase in specific situations. • **SAY:** Additionally, you will learn how to connect and install a printer once it is purchased.

Outline

Outline (LSI Quadrant II):
 	
Note: Instructors can use the PowerPoint slides, handouts, and note pages in conjunction with the following outline.
 	
    I.   Introduction and Overview (PPT Slides 1-2)
    II.   Printers
         a. Definition (PPT Slide 3)
 	
    III.   Types of printers
         a. Two Categories (PPT Slide 4)
            i. Impact Printers
            ii. Non-impact Printers
 	
    IV.   How the different printers work (PPT Slide 5)
 	
    V.   Different Printers on the Market
         a. Dot Matrix (PPT Slides 6-7)
         b. Ink-Jet (PPT Slides 8-9)
         c. Laser (PPT Slides 10-12)
         d. Snapshot (PPT Slides 13-14)
         e. Other high quality printers (PPT Slides 15-16)
 	
    VI.   Choosing a printer (PPT Slides 17-20)
 	
    VII.   Connection and setup of a printer (PPT Slides 21-22)
 	
    VIII. General Troubleshooting (PPT Slides 23-24)

Application
Guided Practice (LSI Quadrant III): The teacher demonstrates learning principles during the Connection and Setup and General Troubleshooting parts of the presentation.

Independent Practice (LSI Quadrant III): Students should be provided opportunities to replicate teacher demonstrations throughout the presentation. Students not demonstrating principles should be involved in critiquing those who are presenting with the teacher.

Summary

Review (LSI Quadrants I and IV):
Checking for understanding (Q&A Session)
Q: What are some different types of printers?
A: *Inkjet, laser, dot-matrix, snapshot*

Q: List what features you should look for when choosing a printer?
A: *Printer Quality, speed, resolution, software, consumables, color, printer media, and warranty*

Evaluation

Informal Assessment (LSI Quadrant III):
Monitor student progress during independent practice and provide independent re-teach/redirection as needed.

Formal Assessment (LSI Quadrant III, IV):
Use the Printers Exam and Exam Key.

Extension/Enrichment (LSI Quadrant IV):
Students that have mastered the lab assignments, can peer-tutor students (one-on-one) that are having difficulty with performing the lab.