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**Lesson Plan**

Microcomputers

MODULE 4

This **lesson plan** was written for the Florida Public School System DIGITAL INFORMATION TECHNOLOGY (8207310) course. Funded by the Cyber/IT Pathways Program, Cyber Florida, and the Florida Department of Education.

**Digital Information Technology (8207310)**

This Lesson Plan is designed to aid high-quality instruction through the identification of components that support learning and teaching. Each section of this Lesson Plan is modeled after 2022-2023 CTE Standards and Benchmarks for Digital Information Technology (8207310) as published by the Florida Department of Education Student Performance Standards.

Microcomputers

# Module Overview

This module covers types of microcomputers, their function, components, and uses, including file management. It also covers the architecture of a microcomputer.

## DIT Textbook Chapter Overview

The *Microcomputers* and *File Management* chapters in the accompanying DIT textbook support the conceptual understanding of the content covered in this module*.*

## CTE Standard and Benchmark

**Standard 01.0:** Demonstrate knowledge, skill, and application of information technology to accomplish job objectives and enhance workplace performance. The student will be able to:

* **01.03** Differentiate between types of file systems and classify common file extensions based on software application programs used in the workplace environment.
* **01.06** Demonstrate basic computer file management skills (e.g., naming, saving, retrieving, and organizing).

**Standard 02.0:** Students will develop an awareness of Microcomputers including:

* **02.01** Explain the general architecture of a microcomputer system.
* **02.02** Explain the need for and demonstrate proficiency using common peripherals (e.g., printers, mouse, keyboard, external hard drive, flash drive).
* **02.03** Examine the concepts of computer maintenance and upgrades.

# Continuity

Students will have read all content included in the *Microcomputers* and *File Management* chaptersto prepare for the lessons included in this module.

Table 1 Continuity

| **Standard** | **Recommended Previous Lesson/Knowledge** | **This Lesson** | **Recommended Upcoming Lessons** |
| --- | --- | --- | --- |
| 02.01 | Students should read the *Microcomputers* chapter. | Students will learn the functions and components of a microcomputer system. | Students may apply knowledge gained from this lesson to other modules with lessons on word processors, spreadsheets, and presentations. |
| 02.02 | Students should review the vocabulary surrounding the common peripherals discussed in the last lesson including printers, mouse, keyboard, external hard drive, and flash drives. | Students will complete the activities to assist them in becoming more familiar with the terminology. | Students may apply knowledge gained from this lesson to other modules with lessons on word processors, spreadsheets, and presentations. |
| 02.03 | Students should read the *Microcomputers* chapter. | Students will examine the concepts of computer maintenance and upgrades. They will review the use of their one drive file management programs and hardware and software system upgrades and updates and how they affect overall microcomputer performance. | Students may apply knowledge gained from this lesson to other modules with lessons on word processors, spreadsheets, and presentations. |
| 01.03 | Students should read the *File Management* chapter. | Students will review the file types that are used with different applications. | Students may apply knowledge gained from this lesson to other modules with lessons on word processors, spreadsheets, and presentations. |
| 01.06 | Students should read the *File Management* chapter. | Students will review basic file management skills, including how to organize files. | Students may apply knowledge gained from this lesson to other modules with lessons on word processors, spreadsheets, and presentations. |

# Student Learning Outcomes

**Standard 02.01**

Students will identify terminology and vocabulary of a microcomputer system. Students will be able to label the components of the system.

**Standard 02.02**

Students will explain the need for and demonstrate proficiency using common peripherals (e.g., printers, mouse, keyboard, external hard drive, flash drive). They will be able to identify them in images, crosswords, and word searches as well as labeling them in visual elements.

**Standard 02.03**

Students will examine the concepts of computer maintenance and upgrades. They will understand how and when to apply preventative and corrective program maintenance and appropriate ways to remedy errors and system issues.

**Standard 01.03**

Students will review the file types that are used with different applications and learn how to rename a file.

**Standard 01.06**

Students will review basic file management skills, including how to organize files.

# Materials Needed

**Standard 02.01, 02.02, 02.03**

All standards are best met with each student having access to a computing device (personal computer, laptop, smart phone, or tablet). The student will use a computing device to explore what software is installed on the operating system which can be used for personal or business purposes. The student will also look at forms of malware, research operating systems, disc cleaning, anti-virus software, and cache clearing.

The student will identify the operating system as well as the components and peripherals that can be utilized with this system. Additionally, the student will identify the components of the system and define their purpose. Activity worksheets can be used without the availability of above referenced technology.

**Standard 01.03, 01.06**

The student will need to access a computing device to complete activities for Standards 01.03 and 01.06.

# Use of Space

If the space does not have computing devices, the teacher can consider the use of student personal devices (ex. smart phones, tablets, laptops). If the student does not have a computing device, the teacher can consider using a device for class demonstration purposes. For instance, the teacher could use their own school-supplied or personal computing device to demonstrate to all students. Consideration should also be given to where furniture and students are placed within the classroom to accommodate diverse needs.

# Prepare for the Lesson

Table 2 shows how the teacher and students should prepare for this lesson.

Table 2 Preparations

| **Teacher** | **Student** | **Assessment/Assignment** |
| --- | --- | --- |
| The teacher should read the *Microcomputers* and *File Management* chapter.  The teacher should be familiar with how an operating system works, file storage on the computer, and whether the school uses cloud storage such as Microsoft OneDrive.  The teacher should consider which computing device should be used for instruction and which computing devices should be used by students.  The teacher should read the chapter cases and consider how to receive feedback from the students. | The student should read the *Microcomputers* and *File Management* chapters and study all terms.  Additionally, the student should read the case at the end of the chapters. | Standard 02.01: Students should complete the word find and crossword activities to reinforce the unit vocabulary.  Standard 02.02: In-class activities are designed to familiarize students with computing devices, their operating system, their software, and the purpose of the installed software. A worksheet will assess the student’s ability to perform this task in class, while also providing elements of the computing system that may not be viewable to the student otherwise (unless teacher has an available computer to take apart for students).  Standard 02.03: The teacher will engage students in a discussion of the ways to protect and manage systems. The teacher will conduct a verbal discussion that includes methods to avoid malware and to clear cache.  Worksheets will assess the student’s ability to perform the activities in class.  The teacher will review both chapter cases in class. The teacher will conduct a verbal discussion to solicit student responses and participation. Students will be assessed on the chapter case based on their written responses to the chapter case questions and in-class discussion.  An answer key and/or rubric is provided for all student activities. |

# Activities

Table 3 shows the student workload effort for each activity in this module.

Table 3 Student Activities and Workload

| **Activity** | **Description** | **Estimated Student Completion Time** | **DIT Standard Alignment** |
| --- | --- | --- | --- |
| What’s Inside a Computer Crossword | Student completes the questions to find the term in the crossword focused on components inside a computer. | 15 minutes in-class | 02.01 |
| Windows Desktop Word Search | Student completes the questions to find the term in the word search focused on the Windows Desktop. | 15 minutes in-class | 02.01 |
| Application Matching | Student matches the appropriate application or category to a task. | 15 minutes in-class | 02.02 |
| Peripheral Input/Output Matching | Student matches the peripheral component to whether it is an input or output component. | 15 minutes in-class | 02.02 |
| System Requirements for a Video Game | Student determines which computer has the system requirements to play the video game Fortnight. | 15 minutes in-class | 02.03 |
| File Type Matching | Student matches the appropriate file type to a file extension. | 15 minutes in-class | 01.03 |
| Chapter Case: Ian’s Research Paper File | Student reviews the case from the *File Management* chapter and answers critical thinking questions. | 45 minutes in-class | 01.03, 01.06 |
| Chapter Case: Gaming Consoles Yesterday, Today, and Tomorrow | Student reviews the case from the *Microcomputers* chapter and answers critical thinking questions. | 45 minutes in-class | 02.01 |

# Assessments

The teacher will evaluate the student’s performance in identifying microcomputer systems, peripherals, and computer maintenance strategies and system upgrades by measuring the accuracy of the student’s documentation. The labeling and vocabulary worksheet assessment will be summative.

The teacher will score assignments on a scale of 1-4 measuring the level of understanding the student is able to communicate about the subject.

# Accommodations

Please adhere to the [Florida Department of Education (2018) Accommodations Assisting Students with Disability Guidelines](https://www.fldoe.org/core/fileparse.php/7690/urlt/0070069-accomm-educator.pdf).

To reduce anxiety while completing activities, provide students with support while completing their assignments and sufficient time to complete their assignments in class.

Students can be encouraged to work with a peer to identify appropriate responses for the chapter cases.