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**Lesson Plan**

Cybersecurity

MODULE 16

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.

Cybersecurity

# Module Overview

This module will give students the opportunity to learn about cybersecurity and its related concepts. Upon completion of this module, students will be able to identify what cybersecurity entails, describe how past notable cybersecurity events affected various organizations and society, explain the relationship between elements of the basic information security model, and how to apply good practices of cyber hygiene.

## DIT Textbook Chapter Overview

The *Cybersecurity* chapter in the accompanying DIT textbook supports 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:

* **01.04** Utilize the Internet to find reliable resources and reference materials (e.g., on-line help, tutorials, manuals).
* **01.05** Apply research strategies to use and evaluate electronic research technologies for valid and reliable information.
* **01.08** Describe ethical issues and problems associated with computers and information technology (e.g., fair use, privacy, public domain, copyright, piracy, plagiarism).

**Standard 08.0:** Use electronic mail to enhance communication skills. The student will be able to:

* **08.03** Demonstrate an understanding of the ethical issues associated with electronic correspondences (e.g., employer’s ownership of email, public access of government email, appropriate uses in the workplace, phishing attacks, permanence of electronic communications on the internet).

# Continuity

Students will have read all content included in the *Cybersecurity* chapterto prepare for the lessons included in this module.

Table 1 Continuity

| **Standard** | **Recommended Previous Lesson/Knowledge** | **This Lesson** | **Recommended Upcoming Lessons** |
| --- | --- | --- | --- |
| 01.04 | Students should read the *Cybersecurity* chapter.  Students should know how to use word processing software. | Students will use the Internet to research notable cybersecurity events. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 01.05 | Students should read the *Cybersecurity* chapter.  Students should know how to use word processing software. | Students will be able demonstrate their ability to complete proficient research using the various online search engines and search tools.  Students will use the Internet to find reliable information to include on a cybersecurity poster. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 01.08 | Students should read the *Cybersecurity* chapter.  Students should know how to use word processing software. | Students will be able to describe problems organizations and individuals encounter when attempting to ensure privacy of information online. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 08.03 | Students should read the *Cybersecurity* chapter.  Students should know how to use word processing software. | Students will be able identify the ethical issues associated with cybersecurity such as confidentiality and integrity of data. | Students will use the knowledge from this lesson to learn future DIT modules. |

# Student Learning Outcomes

**Standard 01.04**

Students will be able to demonstrate their ability to use the Internet to find reliable information relating to various cybersecurity topics.

**Standard 01.05**

Students will be able to apply research strategies while conducting research on cybersecurity.

**Standard 01.08**

Students will be able to analyze research on notable cybersecurity hackers and cyber security events to identify problems organizations encountered with ensuring privacy of information for their business entities.

**Standard 08.03**

Students will be able identify the ethical issues organizations must consider while attempting to secure and ensure the confidentiality of data and electronic correspondence entrusted to them.

# Materials Needed

**Standard 01.04, 01.05, 01.08, and 08.03**

All activities require a computing device for each student with Internet access and word processing software. A computing device can include a personal computer, laptop, smart phone, or tablet.

# Use of Space

Activities require a classroom space that includes computing devices. 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 *Cybersecurity* chapter*.*  The teacher should be proficient with word processing software.  The teacher should consider if a computing device should be used for instruction if computer devices are not available for all students.  The teacher should read the chapter case and consider how to receive feedback from the students. | The student should read the *Cybersecurity* chapter and study all terms.  Additionally, the student should read the case at the end of the chapter. | Worksheets will assess the student’s ability to perform the activities in class.  The teacher will review the chapter case 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** |
| --- | --- | --- | --- |
| Cyber Groups’ Attacks | Student analyzes information about various cyber group attacks. | 45 minutes in-class activity | 01.04, 01.05, 01.08 |
| Cyber Hygiene | Student identifies the importance of practicing good cyber hygiene. | 45 minutes in-class activity x 1-2 classes | 01.04, 01.05, 01.08, 08.03 |
| I Love You Virus | Student researches the infamous ILoveYou Virus and how it affected individuals’ data online. | 45 minutes in-class activity x 1-2 classes | 01.04, 01.05, 01.08, 08.03 |
| Cybersecurity Poster | Student creates a cybersecurity poster based on cybersecurity, cyber hygiene, infamous hackers, or the information security model. | 45 minutes in-class activity x 4-5 classes | 01.04, 01.05, 01.08, 08.03 |
| Tampa Teen Hacker Clark | Student reads about a Tampa teen who was convicted of hacking Twitter accounts. | 45 minutes in-class activity | 01.04, 01.05, 01.08, 08.03 |
| Chapter Case: The Red Team Operators | Student reviews the case from the *Cybersecurity* chapter and answers critical thinking questions. | 45 minutes in-class activity | 01.04, 01.05, 01.08, 08.03 |

# Assessments

The teacher will evaluate the student’s performance by measuring the accuracy of the student’s documentation.

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.