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**Lesson Plan**

Database Applications

MODULE 14

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.

Database Applications

# Module Overview

This module gives students the opportunity to learn how to create and edit a database using Microsoft Access. Upon completion of this module, students will be able to describe the purpose of a database and define various database concepts (table, record, field, form, query, filter, relationships, and reports). Students will also be able to perform various tasks using Microsoft Access, i.e., add/delete records, create a table, create a form, create a query, create a relationship between two tables, and create a report.

## DIT Textbook Chapter Overview

The *Database Applications* chapter in the accompanying DIT textbook supports the conceptual understanding of the content covered in this module*.*

## CTE Standard and Benchmark

**Standard 07.0:** Use database applications to store and organize data. The student will be   
able to:

* **07.01** Create different forms for inputting data into a database application.
* **07.02** Interpret queries for specialized reports using a database application.
* **07.03** Create and modify a database by importing data from other sources.
* **07.04** Create and manage database tables by hiding fields, importing data, adding total rows.
* **07.05** Modify queries by renaming, adding/removing fields, sorting, formatting, and adding calculated fields.
* **07.06** Create and format reports with multiple columns, calculated fields, and images.

# Continuity

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

Table 1 Continuity

| **Standard** | **Recommended Previous Lesson/Knowledge** | **This Lesson** | **Recommended Upcoming Lessons** |
| --- | --- | --- | --- |
| 07.01 | Students should read the *Database Applications* chapter.  Students should know how to use word processing software. | Students will use Microsoft Access to create and edit forms. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 07.02 | Students should read the *Database Applications* chapter.  Students should know how to use word processing software. | Students will use Microsoft Access to create queries and reports.  Students will be able to explain the data contained in queries and reports. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 07.03 | Students should read the *Database Applications* chapter.  Students should know how to use word processing software.  Students should know how to use the Snipping Tool. | Students will use Microsoft Access to create and edit database tables, forms, and reports.  Student will input data and import data from other sources for use in their database. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 07.04 | Students should read the *Database Applications* chapter.  Students should know how to use word processing software.  Students should know how to use the Snipping Tool. | Student will use Microsoft Access to create and modify a database table by using various features to enhance the appearance of the database table. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 07.05 | Students should read the *Database Applications* chapter.  Students should know how to use word processing software.  Students should know how to use the Snipping Tool. | Students will use Microsoft Access to format queries using various features including sorting, filtering, and adding different types of fields. | Students will use the knowledge from this lesson to learn future DIT modules. |
| 07.06 | Students should read the *Database Applications* chapter in the textbook.  Students should know how to use word processing software.  Students should know how to use the Snipping Tool. | Students will use Microsoft Access to create and format the appearance of reports by adding desired fields, images, etc. | Students will use the knowledge from this lesson to learn future DIT modules. |

# Student Learning Outcomes

**Standard 07.01**

Students will be able to create and edit forms from database tables using Microsoft Access.

**Standard 07.02**

Students will be able to create relationships and queries in a database and explain the results of the queries using Microsoft Access.

**Standard 07.03**

Students will be able to create and format a database by manually inputting data and importing data from other sources.

**Standard 07.04**

Students will be able to create and manage database tables by enhancing the appearance of the database.

**Standard 07.05**

Students will be able to create and modify queries within a database by renaming, adding/removing fields, sorting, formatting, and adding calculated fields.

**Standard 07.06**

Students will be able to create reports and format the appearance of reports with multiple columns, calculated fields, and images.

# Materials Needed

**Standard 07.01, 07.02, 07.03, 07.04, 07.05, and 07.06**

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

# Use of Space

Activities associated with standards will 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 *Data Applications* chapter*.*  The teacher should review the presentations, *Module 14 Database Basics* and *Module 14 Getting Started with Microsoft Access* to provide conceptual understanding of the topics in this module.  The teacher should be proficient with database applications software, such as Microsoft Access.  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 *Data Applications* 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** |
| --- | --- | --- | --- |
| Database Basics | Student defines basic database components on a worksheet. | 45 minutes in-class activity | 07.01 |
| Create a Database Table | Student creates and edits a database table. | 45 minutes in-class activity x 2-3 classes | 07.01, 07.02, 07.03, 07.04 |
| Sort and Filter a Database | Student practices sorting and filtering a database. | 45 minutes in-class activity x 2-3 classes | 07.01, 07.03, 07.04, 07.05 |
| Relationships, Queries, and Reports | Students practices creating relationships between database tables, creating queries from database tables, and creating reports from database tables and database queries. | 45 minutes in-class activity x 2-3 classes | 07.01, 07.03, 07.04, 07.05, 07.06 |
| Chapter Case: Dionne’s Grade Tracking Database | Student reviews the case from the *Database Applications* chapter and answers critical thinking questions. | 45 minutes in-class activity | 07.01, 07.02, 07.03, 07.04 |

# Assessments

The teacher will evaluate the student’s performance in working with database files 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.