

# About This Exam Review Kit

## ***Microsoft Technology Associate Certification Exam Review Kit: 98-364 Database Administration Fundamentals***

### **Exam Review Kit Description**

- This Microsoft® Technology Associate (MTA) Certification Exam Review Kit contains a series of 20 review lessons intended to reinforce concepts in preparation for the *MTA Certification Exam: 98-364 Database Administration Fundamentals* and/or serve as a resource and guide for teachers and faculty to create their own additional student learning experiences.
- It is assumed that students taking an MTA certification exam have completed and/or are currently taking academic courses, have job experience that addresses the exam objective domain, or both.
- The Exam Review Kits:
  - Are intended to supplement (not supplant) existing academic courses
  - Are not intended to serve as foundational content for academic courses
  - Are directly and closely tied to the objective domain of each individual MTA certification exam
  - Are platform-specific or -agnostic in accord with the objective domain of each MTA certification exam.
- Because each certification exam has approximately 20 objectives, this MTA Exam Review Kit includes 20 review lessons of 50 minutes apiece.
- The materials for each review lesson include a lesson plan, lesson delivery materials, and student activity documents.
- MTA certification exams test breadth of technical knowledge and help students explore career options before choosing a specialized career path with minimal investment of time and money. MTA certifications measure and validate the fundamental technology skills that are in demand today and provide an essential foundation to build a career in technology. Earning MTA certification provides students with a credential that helps solidify the knowledge around relational database fundamentals and administration aspects and motivates them to succeed in continued studies, compete on admissions for further schooling, and prepare for a career in technology. The MTA certifications enable students to prove their commitment to technology and connect with a community of more than 5 million Microsoft Certified Professionals (MCPs).
- Teachers and faculty can integrate the new MTA certification exams easily into existing schedules and curricula and deliver exams right in the classroom, on their own schedules.

### **Audience**

- This Exam Review Kit is intended for students attending high schools and two-year colleges who have an interest in technology and technology-related careers, and who are preparing for the *MTA Certification Exam 98-364: Database Administration Fundamentals* and seek to

prove their introductory knowledge of and skills with databases, including relational databases such as Microsoft SQL Server®.

- It is recommended that exam candidates be familiar with the concepts of and have hands-on experience with the technologies described here, either by taking relevant training courses or by working with tutorials and samples available on MSDN® and in Microsoft Visual Studio®. Although minimal hands-on experience with the technologies is recommended, job experience is not assumed for these exams.
- Candidates for this exam are in the process of expanding their knowledge and skills in the following areas:
  - Core database concepts
  - Relational database concepts
  - Security requirements for databases and the data stored in them
  - Database objects, such as tables and views
  - Graphical tools and Transact–Structured Query Language (T-SQL) scripts
  - Database queries
  - Database Definition Language (DDL)
  - Data Manipulation Language (DML)
  - Stored procedures

## Student Prerequisites

This course requires that you meet the following prerequisites:

- It is assumed that students taking an MTA certification exam have completed and/or are currently taking academic courses, have job experience that addresses the exam objective domain, or both.
- It is expected that students have had experience using SQL Server and Visual Studio.

## Exam Review Kit Objective Domain

This Exam Review provides lessons that reinforce previous learning in the following objectives:

### 1. Understanding Core Database Concepts

#### 1.1. Understand how data is stored in tables.

*This objective may include but is not limited to:* understanding what a table is and how it relates to the data that will be stored in the database; columns/fields, rows/records.

#### 1.2. Understand relational database concepts.

*This objective may include but is not limited to:* understanding what a relational database is, the need for relational database management systems (RDBMS), and how relations are established.

#### 1.3. Understand data manipulation language (DML).

*This objective may include but is not limited to:* understanding what DML is and its role in databases.

1.4. Understand data definition language (DDL).

*This objective may include but is not limited to:* understanding how T-SQL can be used to create database objects such as tables and views.

## 2. Creating Database Objects

2.1. Choose data types.

*This objective may include but is not limited to:* understanding what data types are, why they are important, and how they affect storage requirements.

2.2. Understand tables and how to create them.

*This objective may include but is not limited to:* purpose of tables; creating tables in a database by using proper ANSI SQL syntax.

2.3. Create views.

*This objective may include but is not limited to:* understanding when to use views and how to create a view by using T-SQL or a graphical designer.

2.4. Create stored procedures and functions.

*This objective may include but is not limited to:* selecting, inserting, updating, or deleting data.

## 3. Manipulating Data

3.1. Select data.

*This objective may include but is not limited to:* utilizing SELECT queries to extract data from one table; extracting data by using joins; combining result sets by using UNION and INTERSECT.

3.2. Insert data.

*This objective may include but is not limited to:* understanding how data is inserted into a database; how to use INSERT statements.

3.3. Update data.

*This objective may include but is not limited to:* understanding how data is updated in a database and how to write the update data to the database by using the appropriate UPDATE statements; update by using a table.

3.4. Delete data.

*This objective may include but is not limited to:* deleting data from single or multiple tables; ensuring data and referential integrity by using transactions.

## 4. Understanding Data Storage

4.1. Understand normalization.

*This objective may include but is not limited to:* understanding the reasons for normalization, the five most common levels of normalization, how to normalize a database to third normal form.

## 4.2. Understand primary, foreign, and composite keys.

*This objective may include but is not limited to:* understanding the reason for keys in a database, choosing appropriate primary keys, selecting appropriate data type for keys, selecting appropriate fields for composite keys, understanding the relationship between foreign and primary keys.

## 4.3. Understand indexes.

*This objective may include but is not limited to:* understanding clustered and non-clustered indexes and their purpose in a database.

**5. Administering a Database**

## 5.1. Understand database security concepts.

*This objective may include but is not limited to:* understanding the need to secure a database, what objects can be secured, what objects should be secured, user accounts, and roles.

## 5.2. Understand database backups and restore.

*This objective may include but is not limited to:* understanding various backup types, such as full and incremental, importance of backups, how to restore a database.

**Exam Review Kit Timing**

Each of the 20 Review Lessons in this collection is intended to be used in a single 50 –minute class period.

**Exam Review Kit Materials**

The following materials are included in this Exam Review Kit:

- Review Lessons: A plan for teacher and student activities in reviewing the learning objectives and providing the key points that are critical to the success of the in-class review experience
- Microsoft PowerPoint presentations: A structure for classroom lectures and discussions
- Student Activities: A hands-on platform for applying the knowledge and skills reviewed in the lesson
- Student Activity Answer Keys: Solutions to Student Activities
- Additional resources: Various resources to expand reviewing and learning opportunities

**Software Requirements**

The following software is suggested for this series of review lessons:

- Microsoft SQL Server
- Microsoft Visual Studio
- Microsoft PowerPoint® 2007

## Instructional Preparation Activities

It is highly recommended that you complete the following instructional preparation activities:

- Familiarize yourself with the objectives of each lesson.
- Walk through each Review Lesson presentation slide deck and read the corresponding Instructor Notes (located in the Notes view of the presentation slide deck) for the lesson.
- Familiarize yourself with the student activity or activities.
- Practice presenting each module.
- Identify the key points and must-know information for each topic.
- Perform each demonstration and hands-on lab.
- Anticipate the questions that students might have.
- Identify examples, analogies, impromptu demonstrations, and additional delivery tips that will help to clarify module content and provide a more meaningful learning experience for your specific audience.
- Customize and enhance your instructor notes.
- Review the updated information about the Microsoft Certification Program on the Microsoft Learning Certifications website (<http://www.microsoft.com/learning/en/us/certification/cert-default.aspx>).