

# MTA: Database Fundamentals – Skills Measured

NOTE: The bullets that appear below each of the skills measured are intended to illustrate how we are assessing that skill. This list is not definitive or exhaustive.

NOTE: In most cases, exams do NOT cover preview features, and some features will only be added to an exam when they are GA (General Availability).

## Exam 98-364: Database Fundamentals

### Understanding core database concepts (20–25%)

#### Understand how data is stored in tables

- understand what a table is and how it relates to the data that will be stored in the database; columns/fields, rows/records

#### Understand relational database concepts

- understand what a relational database is, the need for relational database management systems (RDBMS), and how relations are established

#### Understand data manipulation language (DML)

- understand what DML is and its role in databases

#### Understand data definition language (DDL)

- understand how T-SQL can be used to create database objects, such as tables and views

### Create database objects (20–25%)

#### Choose data types

- understand what data types are, why they are important, and how they affect storage requirements

#### Understand tables and how to create them

- purpose of tables; create tables in a database by using proper ANSI SQL syntax

#### Create views

- understand when to use views and how to create a view by using T-SQL or a graphical designer

### **Create stored procedures and functions**

- select, insert, update, or delete data

## **Manipulate data (25–30%)**

### **Select data**

- utilize SELECT queries to extract data from one table, extract data by using joins, combine result sets by using UNION and INTERSECT

### **Insert data**

- understand how data is inserted into a database, how to use INSERT statements

### **Update data**

- understand how data is updated in a database and how to write the updated data to the database by using the appropriate UPDATE statements, update by using a table

### **Delete data**

- delete data from single or multiple tables, ensure data and referential integrity by using transactions

## **Understand data storage (15–20%)**

### **Understand normalization**

- understand the reasons for normalization, the five most common levels of normalization, how to normalize a database to third normal form

### **Understand primary, foreign, and composite keys**

- understand the reason for keys in a database, choose appropriate primary keys, select appropriate data type for keys, select appropriate fields for composite keys, understand the relationship between foreign and primary keys

### **Understand indexes**

- understand clustered and non-clustered indexes and their purpose in a database

## **Administer a database (10–15%)**

### **Understand database security concepts**

- understand the need to secure a database, what objects can be secured, what objects should be secured, user accounts, and roles

### **Understand database backups and restore**

- understand various backup types, such as full and incremental, importance of backups, how to restore a database