



Microsoft Technology Associate Certification Exam Review Kit:

98-362 Windows Development Fundamentals

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Microsoft Technology Associate Certification Exam Review Kit:
98-362 Windows Development Fundamentals

About This Exam Review Kit

Microsoft Technology Associate Certification Exam Review Kit: 98-362 Windows Development 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: 98-362 Windows Development 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. Code samples are provided in both Microsoft C#® 2008 and Microsoft Visual Basic® 2008 when appropriate.
- Because each certification exam has approximately twenty objectives, this 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 validates fundamental technology industry knowledge and motivates them to succeed in continued studies, compete on admissions, 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 and technology workers who are preparing for the *MTA Certification Exam: 98-362 Windows Developer Fundamentals* and seek to prove introductory knowledge of and skills with Windows programming and application development.

- 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 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:
 - Various types of applications that run on Windows
 - How to create graphical user interface (GUI) applications that run on Windows by using Windows Forms or Windows Presentation Foundation (WPF)
 - How Windows Services are programmed and hosted on a computer that runs Windows
 - How to access data from various sources for use in a Windows-based application
 - How to deploy a Windows application to target computers successfully

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.
- While the test is intended to be language-agnostic, it is expected that students have had experience using a Microsoft .NET language such as C# or Visual Basic.

Exam Review Kit Objective Domain

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

1. Understanding Windows Programming Basics

- 1.1. Identify Windows application types.
This objective may include but is not limited to: Windows Forms, Windows Presentation Foundation (WPF), Windows Services, and Win32 applications.
- 1.2. Implement user interface design.
This objective may include but is not limited to: core user interface design principles for creating graphical-based applications.
- 1.3. Create Windows-based applications by using Visual Studio.
This objective may include but is not limited to: project types, importance of the various aspects of a Windows Application project.

2. Creating Windows Forms Applications

2.1. Create and handle events.

This objective may include but is not limited to: methods for creating events in an application; handling events raised in an application.

2.2. Understand Windows Forms inheritance.

This objective may include but is not limited to: implementing forms inheritance in applications for visual inheritance.

2.3. Understand how to create new controls and extend existing controls.

This objective may include but is not limited to: creating a new GUI control or inheriting functionality from an existing control.

2.4. Validate and implement user input.

This objective may include but is not limited to: implementing the correct user input model based on application design and requirements; accepting keyboard and mouse input; validating user input through GUI controls such as text boxes and dialog controls.

2.5. Debug a Windows-based application.

This objective may include but is not limited to: using breakpoints and debugging techniques to identify issues in code; debugging a Windows Services application.

3. Creating Windows Services Applications

3.1. Create a Windows Services application.

This objective may include but is not limited to: inheriting the *ServiceBase* class; writing code in the *Main* method; overriding the *OnStart* and *OnStop* procedures.

3.2. Install a Windows Services application.

This objective may include but is not limited to: creating installers for Windows Services; installing services on a target computer.

4. Accessing Data in a Windows Forms Application

4.1. Understand data access methods for a Windows application.

This objective may include but is not limited to: connecting to a database.

4.2. Understand databound controls.

This objective may include but is not limited to: how data is bound to controls; how to display the data in the appropriate manner; forms and WPF binding; validating databound items.

5. Deploying a Windows Application

5.1. Understand Windows application deployment methods.

This objective may include but is not limited to: different methods of deploying Windows applications; choosing the appropriate method for deployment; deploying an application by using *ClickOnce*.

5.2. Create Windows setup and deployment projects.

This objective may include but is not limited to: creating setup projects for applications; specifying custom actions; creating special folders; security requirements; x64 deployment and program files location.

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.
- Duplicate resources may be available for some lessons in both C# and Visual Basic as appropriate.

Software Requirements

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

- Microsoft Visual Studio 2008, or
 - Microsoft Visual Basic 2008, Express Edition
(<http://www.microsoft.com/express/downloads/#2008-Visual-Basic>)
 - Microsoft Visual C# 2008 Express Edition
(<http://www.microsoft.com/express/downloads/#2008-Visual-BasicCS>)
 - Microsoft Visual C# 2008, Express Edition
(<http://www.microsoft.com/express/downloads/#2008-Visual-CS>)
- Microsoft SQL Server 2008 or
 - Microsoft SQL Server 2008 Express Edition
- 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 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>).

About the Authors

Tim McMichael

Tim has been a high school computer science teacher for the past 11 years. He currently teaches Advanced Placement computer science, .NET programming, and computer game programming at Raymond S. Kellis High School in Glendale, Arizona. Prior to teaching, Tim worked for several years as a database application developer.



Patricia Philips

Patricia taught computer science for 20 years in Janesville, Wisconsin. She served on Microsoft's National K–12 Faculty Advisory Board and edited the Microsoft MainFunction website for technology teachers for two years. For the past four years, she has worked with Microsoft in a variety of roles related to K–12 curriculum development and pilot programs, including Web design and XNA. In her role as an author and editor, Patricia wrote several articles and a student workbook on topics including computer science, Web design, and computational thinking. She is currently the editor of the Computer Science Teachers Association newsletter, the *Voice*.



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Kenney has taught computer science for four years at Phillips Exeter Academy, in Exeter, New Hampshire. He has experience in C, C++, SQL[®], Visual Basic, and Microsoft[®] Access[®]. He received his BS in computer science from Cornell University, and his M.Ed. from Harvard University.

Peggy Fisher

Peggy teaches computer science at Indian Valley High School (IVHS), a rural high school in Central, Pennsylvania, that offers courses in programming (C#, Visual Basic, and Java for Advanced Placement courses), and Web design, including Expression Web, Hypertext Markup Language (HTML), JavaScript, and cascading style sheets (CSS). Prior to teaching, Peggy worked for a large insurance company outside Philadelphia. She started as a job coordinator, moved to programming, and then became a systems analyst and manager. Finally, she was promoted to director prior to leaving the corporate world to join the field of education. She has been at IVHS for the past eight years and truly enjoys her new career. Peggy also teaches part-time at Pennsylvania State University in the Continuing Education program. Her goal in teaching is to instill the love of learning so that her students will not only graduate, but also become life-long learners.

Peter Gruenbaum

Peter has been a physicist, software developer, a technical writer, and a teacher. He has written about technologies as diverse as the Tablet PC, mobile phones, distance learning, and cloud computing. As a software developer, he has written software using Tablet PCs, Augmented Reality, 3-D visualization, and computer-aided design. He created a program to teach creative technology classes to low-income youth to inspire them to consider technology careers, obtaining grant money from the Gates Foundation, Microsoft, and others. He founded the company SDK Bridge to bring his writing and teaching together. Peter received his BA in physics from the University of Chicago and his Ph.D. in applied physics from Stanford University.

Brian G. Scarbeau

Brian currently teaches computer science at Lake Highland Preparatory School in Orlando, Florida. He has 31 years of teaching experience, including 5 spent in college-level computer science. Brian was a Microsoft MVP for 5 years. Brian traveled the United States and Canada teaching teachers how to use Microsoft .NET products with their students. He developed curricula in ASP.NET Web Matrix and DotNetNuke for Microsoft and did a series of webcasts on DotNetNuke. He is a co-author of *Professional DotNetNuke 5* (Wrox 2009).

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