

Scope and Sequence

Chapter 1: Introduction to Windows Programming	
Lesson	Overview
1	History of Windows
2	The Evolution of Windows Programming
3	Windows Programming Languages
Activity:	<i>Install Visual C# Express Edition</i>

Chapter 2: Fundamentals of C#	
Lesson	Overview
1	Introduction to C#
2	Visual C# Express Edition Software
3	Hello, World!
Activity:	<i>Enhance Hello, World!</i>

Chapter 3: Windows Programming Concepts	
Lesson	Overview
1	Common Windows Elements
2	C# Syntax
3	Event-Driven Programming
4	Namespaces
Activity:	<i>A More Personal Hello</i>

Chapter 4: Data Types and Variables	
Lesson	Overview
1	Value Data Types
2	Variables
3	Reference Data Types
4	Introducing Strings
Activity:	<i>Experiment with Data Types</i>

Chapter 5: Basic Flow Control	
Lesson	Overview
1	Logical Expressions
2	Using the “if” Statement
3	For Loops
4	While Loops
Activity:	<i>Jeepers, Beepers!</i>

Chapter 6: User Input	
Lesson	Overview
1	Text Boxes
2	List Boxes and Combo Boxes
3	Radio Buttons and Check Boxes
Activity:	<i>Telling Tall Tales</i>

Chapter 7: Math Functions in C#	
Lesson	Overview
1	Math Operators (+, -, *, /, %)
2	.NET Framework Math Functions
3	A Simple Calculator
Activities:	<i>Divide and Multiply</i>

Chapter 8: Working with Strings	
Lesson	Overview
1	Common String Operations
2	Formatting Strings
3	Converting Between Strings and Numbers
Activity:	<i>Caesar's Cipher</i>

Chapter 9: Methods	
Lesson	Overview
1	Writing and Calling Methods
2	Method Parameters and Return Values
3	Calling Methods
Activity:	<i>What's Your Birthday?</i>

Chapter 10: Debugging and Exceptions	
Lesson	Overview
1	The Visual C# Express Edition Debugger
2	Debugging Demonstration
3	C# Runtime Exceptions
Activity:	<i>Divide by Zero</i>

Chapter 11: Collections	
Lesson	Overview
1	Arrays
2	Enumeration and ForEach
3	Linked Lists
Activity:	<i>Your To-Do List</i>

Chapter 12: Object-Oriented Programming	
Lesson	Overview
1	Object-Oriented Concepts
2	History of OOP
3	Defining an Object
Activity:	<i>Creating Songs</i>

Chapter 13: Classes in C#	
Lesson	Overview
1	Defining a Class
2	Properties and Methods
3	Public vs. Private
4	Constructors
5	Static Members
Activity:	<i>Your Song Player</i>

Chapter 14: Sorting and Recursion	
Lesson	Overview
1	Simple Sorting
2	Recursion
3	Recursive Sorting
Activity:	<i>The Number Sort</i>

Chapter 15: File Input and Output	
Lesson	Overview
1	Using Files in a Program
2	Reading and Writing Text Files
3	Reading and Writing Binary Files
4	SaveFileDialog and OpenFileDialog
Activity:	<i>Your Own Notepad</i>

Chapter 16: Inheritance and Polymorphism	
Lesson	Overview
1	Base Classes and Derived Classes
2	Using References to Base and Derived Classes
3	Virtual Base Methods
4	The “Object” Base Class
5	Using Base Features from Derived Classes
Activity:	<i>Creating Chess Pieces</i>

Chapter 17: Final Project	
Lesson	Overview
1	The Game of Chess
2	The Starter Project
3	Initializing the Game
4	Finishing handleClick()
5	Moving Pawns
6	Moving Other Pieces, Testing for Check
Activity:	<i>(Distributed throughout the chapter)</i>

Chapter Notes, Tests, and Activity Solutions

The following sections contain summaries, activity solutions and tests with answer keys for each chapter. The tests and answer keys are arranged on separate pages so you can duplicate or extract just the test page for your student. The activity solutions are briefly described and you will find the complete solution code on the Teacher's Disc. You can open each project using the Visual Studio software to let you easily browse through the activity source files. This is how your student will be managing his or her source code! Or you may open the "*.cs" source files directly with Notepad, Wordpad, or any other text editor.

Test questions are free-form answers, not multiple-choice, and suitable answers are listed in the answer key. In most cases the answers are derived from the student text. However some questions may ask the student to be creative and you may use your judgment evaluating the answer.