

Appendix A: Objectives and Courseware Locations

ICT Gaming Essentials

The ICT Gaming Essentials course and this appendix are designed to help students prepare for the ICT Gaming Essentials digital certificate exam. Students can use this appendix as a study guide to locate content within the ICT Gaming Essentials courseware that corresponds to the specific skills objectives of the ICT Gaming Essentials digital certificate exam.

Learning objectives for all courses in the ICT Essentials series are based on the Florida Department of Education’s Curriculum Framework for Secondary–Middle School Information and Communications Technology skills, and align to National Assessment of Educational Progress (NAEP) frameworks for Technology and Engineering Literacy.

For more information about the ICT Essentials suite of courses and certificates, visit the ICT Essentials pages at www.ICTcertified.com.

ICT Domain 10: Gaming Essentials Learning Objective	ICT Gaming Essentials Course Courseware Lesson, Topics and Activities
Sub-Domain 10.1 Identify principles of gaming.	
10.1.1 Describe the role of games in modern society (e.g., education, task training, social networking, therapy, recreation). 10.1.2 Identify various types of games (e.g., chance, skill, knowledge, role playing, storytelling).	ICT Gaming Essentials Lesson 1: Introduction to Game Design - Why We Play Games
Sub-Domain 10.2 Describe the design process and apply it to game development.	
10.2.1 Identify the steps of the design process for creating a game. 10.2.2 Apply the design process to solving a problem.	ICT Gaming Essentials Lesson 1: Introduction to Game Design - The Design Process for Creating Games - Activity: Stepping Through the Design Process

ICT Domain 10: Gaming Essentials Learning Objective	ICT Gaming Essentials Course Courseware Lesson, Topics and Activities
10.2.3 Analyze (deconstruct) existing games. 10.2.4 Identify the tools and skills needed for creating games.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games - Activity: Designing a Storyboard
10.2.5 Identify design criteria and constraints. 10.2.6 Create storyboards to model a game’s program flow and functionality.	Lesson 1: Introduction to Game Design - The Design Process for Creating Games - Activity: Stepping Through the Design Process - Activity: Designing a Storyboard
Sub-Domain 10.3 Describe programming concepts and apply them to game development.	
10.3.1 Identify the programmer’s role in creating games. 10.3.2 Identify common programming languages and applications used to create computer games.	ICT Gaming Essentials Lesson 2: Introduction to Programming for Games - How the Programmer Interacts with the Computer - Activity: Get Inspired to Code
10.3.3 Compare sequential, iteration (loop) and selection programming structures. 10.3.4 Define the term algorithm (i.e., a set of repeatable steps) and how it applies to problem-solving. 10.3.5 Create an algorithm to solve a problem or complete a task.	Lesson 2: Introduction to Programming for Games - Understanding Algorithms
10.3.6 Use pseudocode to model a game program’s flow. 10.3.7 Define logic errors and identify them in a game program or model.	Lesson 2: Introduction to Programming for Games - Introduction to Pseudocode and Flow Charts - Activity: Logic Statement Flow Chart

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<p>10.3.8 Explain the types and uses of variables in game programming.</p> <p>10.3.9 Describe basic Boolean concepts, including logical operators, order of precedence, expressions.</p> <p>10.3.10 Describe the use of events, event handlers and functions in game programming.</p> <p>10.3.11 Describe the use of parameters and arguments in game programming.</p> <p>10.3.12 Describe the use of objects, classes and instances in game programming.</p> <p>10.3.13 Describe the use of properties and methods with objects in game programming.</p>	<p>ICT Gaming Essentials</p> <p>Lesson 3: Basic Programming Concepts</p> <ul style="list-style-type: none"> - Basic Programming Concepts - Activity: Follow the Leader - Activity: Logic Statement Flow Chart - Activity: Where's the Bug? - Activity: What's Wrong with the Code?
<p>Sub-Domain 10.4 Create an interactive game program.</p>	
<p>10.4.1 Write the appropriate code to create a simple game using structured programming.</p> <p>10.4.2 Test and evaluate the game program you created.</p> <p>10.4.3 Modify the game program as needed to solve a problem.</p> <p>10.4.4 Create an animated object (i.e., sprite) to be used in a game program.</p> <p>10.4.5 Use programming code to control the behavior of an animated object (i.e., sprite) in a game program.</p>	<p>ICT Gaming Essentials</p> <p>Apply Your Knowledge: Creating Interactive Games</p> <ul style="list-style-type: none"> - Creating an Interactive Game - Activity: Getting Started with Scratch - Activity: Create an Animation - Activity: Going Bananas - Activity: Going Bananas — Advanced - Activity: Scratch Step-It-Up Project - Activity: Scratch Level-Up Team Project - Case Study: Invent with Scratch (Game) - Case Study: Invent with Scratch (Demo)