

# ICT Gaming Essentials Learning Objectives

## ICT Domain 10: Gaming Essentials

### Learning Objectives

#### 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, and storytelling).

#### 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.

10.2.3

Analyze (deconstruct) existing games.

10.2.4

Identify the tools and skills needed for creating games.

10.2.5

Identify design criteria and constraints.

10.2.6

Create storyboards to model a game's program flow and functionality.

#### 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.

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.

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.

## **ICT Domain 10: Gaming Essentials**

### **Learning Objectives**

10.3.8

Explain the types and uses of variables in game programming.

10.3.9

Describe basic Boolean concepts, including logical operators, order of precedence, expressions.

10.3.10

Describe the use of events, event handlers and functions in game programming.

10.3.11

Describe the use of parameters and arguments in game programming.

10.3.12

Describe the use of objects, classes and instances in game programming.

10.3.13

Describe the use of properties and methods with objects in game programming.

### **Sub-Domain 10.4**

#### **Create an interactive game program.**

10.4.1

Write the appropriate code to create a simple game using structured programming.

10.4.2

Test and evaluate the game program you created.

10.4.3

Modify the game program as needed to solve a problem.

10.4.4

Create an animated object (i.e., sprite) to be used in a game program.

10.4.5

Use programming code to control the behavior of an animated object (i.e., sprite) in a game program.