GameMaker Programming I

Oak Hills High School, Business & Technology, ½ credit

Contact Information	
Instructor:	Mr. Tim Bradrick
Room:	341
Contact Info:	bradrick_t@ohlsd.org @Bradrick_OHHS (513) 895-9851	https://classroom.google.com https://oakhills-bus-and-tech.org https://passport.carnegielearning.com/#/login/form
Office Hours:	If you need additional help or time on a classroom computer, please let me know. Most days, I am available before or after school as needed.
Department Social Media Accounts:	Follow us on your various social media accounts: Twitter: @ohhsbusandtech Instagram: OHHSBusandTech Facebook: Oak Hills Business & Technology Dept. ***Tag us and post using the hashtag #OHHSSkillsforSuccess for extra credit. ***

Course Overview

The Zulama GameMaker Programming I course covers basic principles of computer science, game design, and programming concepts such as variables, conditionals, loops, and arrays. Students analyze the impact of computers on our world and are introduced to programming by completing fun yet rigorous game design projects. Students learn to plan, design, code, and test software by building two dimensional (2D) games using the scripting language GML in GameMaker: Studio. This class is a prerequisite to GameMaker Programming II.

Course Objectives

Students will demonstrate proficiency with:

- Navigating GameMaker: Studio software
- Applying GML scripting language in game building activities
- Building a completely executable 2D game
- Exploring computer science principles
- Problem solving to debug programming errors
- Investigating the game programming career field
- Developing a digital portfolio

Course Outline

We will try to follow the schedule listed below. However, changes may be made due to class needs, overall progress, or unforeseen interruptions.

TOPIC	TASKS	TIMEFRAME
Introduction to Class	Syllabus, Student Survey, Class Folder setup, Classroom and ClassCraft accounts	1 week
Overview of Game Design and Computer Science Principles	Using Data for Information and Knowledge, Tell Time Using Binary Clocks, The Impact of Games, CS Vocabulary, Ethical Use of Computers	2 weeks
Using GameMaker	Seng Up GameMaker Projects, GameMaker Studio Interface, Game Assets and GameMaker, Storing, Securing, and Compressing Data	1 week
Zulama Pinball	Game Design Documents, Designing New Playing Pieces, Parts of a GameMaker Game, Backgrounds and Rooms, Adding Code	1 week
Making the Game Work	Controlling the Paddle, Using Mouse Input, Collision with Ball, GameMaker Tips, If Statements, Debugging, Is the Game Fair?	1 week
Finishing Zulama Pinball	Add More Balance, Playtesting, Evaluate the Playtest	1 week
Ball Bouncer	Rooms and Backgrounds, Ball and Wall Objects, Adding the Goal, Create Playing Pieces Workshop	2 weeks
Ball Bouncer Game Mechanics	How to Prevent Paddle from Rotating into Wall, Variables and Conditionals, Progress Check, Instances and Variables	2 weeks
Matching Game	Card Sprites, Controller Object	1 week
Matching Game Mechanics	Managing Variables, Game Timing, Randomizing the Game, Game Improvements, Level Up, Editing Sprites	1 week
31 Game Setup	Manipulating Arrays, Set up Playing Board, For Loops, Managing the Deck, Deal the Hand Workshop	2 weeks
Build 31	The Player's Turn, The Computer's Turn, End the Hand, Finish the Game, Reflecting on your Build Plan	3 weeks