Lesson 8: Basic Movement

In this lesson, students will learn how to set up a player controller in a 2D game. They will understand the importance of player control in creating an engaging game experience and learn about velocity input and grounding the player. Through demonstrations, guided practice, and independent work, students will gain the skills to implement a player controller in their own game projects, customize movement mechanics, and create a game over state when the player hits obstacles. The lesson will encourage collaboration, problem-solving, and experimentation, while emphasizing the key concepts of player control, velocity input, grounding, and creating challenging gameplay.

## **Objectives:**

- Students will be able to set up a player controller in a 2D game.

- Students will be able to implement a game over state when the player hits obstacles.

- Students will understand the concept of velocity input and grounding the player.

## **Materials:**

- Computers with game development software installed

- Game assets (sprites, backgrounds, etc.)

- Projector or whiteboard for demonstrations

## **Bell-Ringer Activity:**

- Display a screenshot or video clip of a 2D game where the player is controlled by keyboard input.

- Ask students to discuss with a partner what they think are the key components needed to implement player control in a game.

- After a few minutes, ask a few pairs to share their ideas with the class.

## **Introduction:**

- Explain to the students that in this lesson, we will be setting up a player controller in a 2D game.

- Emphasize the importance of player control in creating an engaging and interactive game experience.

- Briefly discuss the concept of velocity input and how it can be used to move the player character in the game world.

- Introduce the concept of grounding the player and explain that it prevents the player from falling through obstacles or off the screen.

## **Direct Instruction:**

- Demonstrate how to set up a player controller in the game development software.

- Show the students how to create a script or code that takes input from the keyboard or controller and applies it to the player character's velocity.

- Explain how to handle grounding the player by checking for collisions with the ground or other solid objects.

- Provide examples and code snippets to illustrate the concepts and guide the students through the process.

## **Guided Practice:**

- Divide the students into small groups and assign each group a specific task related to setting up the player controller.

- Provide the necessary resources and support for each group to complete their task.

- Circulate among the groups, offering guidance and answering any questions they may have.

- Encourage collaboration and problem-solving within the groups.

## **Independent Practice:**

- Instruct each student to create their own 2D game project and implement a player controller.

- Encourage them to experiment with different input methods (keyboard, controller, touch) and customize the movement mechanics to fit their game concept.

- Remind them to also implement the game over state when the player hits obstacles.

- Allow students to work independently, but be available to provide assistance and answer questions as needed.

## **Exit Ticket:**

- Ask students to write a short paragraph summarizing the steps they took to set up the player controller and game over state in their game project.

- Collect the exit tickets before the end of the class.

## **Closure:**

- Review the key concepts covered in the lesson: setting up a player controller, implementing velocity input, grounding the player, and creating a game over state.

- Emphasize the importance of these concepts in creating a playable and challenging game.

- Encourage students to continue exploring and experimenting with game development to further enhance their skills.

- Thank the students for their participation and effort in the lesson.