

Lesson 2 Game Control Schemes

Teacher: Claire Lin	Grade: 3-5	Time Required: 90 minutes
Subject: Game control schemes design	Objective: Students will 1) Know how to design an interactive scheme for a game.	
Teaching Materials		New Concepts
Teacher: Codey, A Computer with installed mBlock 5, the lesson plan and the slide	Students: Codey, Computers with installed mBlock 5	Game Design (design procedure) Coding blocks: <i>Broadcast, Repeat, Stop the script</i>

The Teaching Sequence

Introduction: Give students an overview of this lesson – Game Control Schemes

(Objective) Students will know: ① What the “Game Control Scheme” is; ② What common control schemes are; ③ How to design a proper control scheme for a game.

When we design a game, the first thing we consider is choosing a proper gaming controller for the game. It’s because how we control the game can vary a lot across different controllers. And we control games mainly using mice, keyboards, controllers (PSP, PS, Wii Remote or Nintendo D-pad) or VR headsets. In most cases, players can choose to use these controls either collaboratively or separately.

Different types of games have their specific control schemes. The following chart shows us the pros and cons of using a controller VS using a mouse + a keyboard.

	A controller	A mouse + a keyboard
Good stuff	Holding a controller in hands feels good; Easy to operate; Provide a good	Precise; Speedy; Suitable for PC games.

		immersive experience; No gesture constraints.	
	Bad stuff	Poor accuracy; Extra expenditure	The gaming experience might be poor; Need a PC to work with
	game genres	Action, Fighting, Driving	Shooter, Real-time strategy

Guided Practice:

Practice – Racing game (This game is just given as an example. Alternatively, the teacher can design a new game.)

1) Brainstorming: Students will know how to choose the preferred control schemes for driving games.

The teacher gives instructions to students: “Let’s take a look at this racing game (show the example games in the slide). When playing a racing game, we usually use a keyboard to control the car to move in different directions. But a keyboard might not be the best option for a racing game because players may find it hard to engage themselves in the racing game when using a keyboard to control the car. Besides, players who use a keyboard are likely to sit before a computer screen for hours. Bad for their eyes. So, I plan to design a new racing game: it is more engaging, easy to control, and allows players to play the game anywhere. So, I will change the control scheme to make the game more appealing to players.”

Quick Guide: (The teacher asking students) “Can you think of any other control methods which help enhance the gaming experience?”

The sample answer: Using a game controller to control the car.

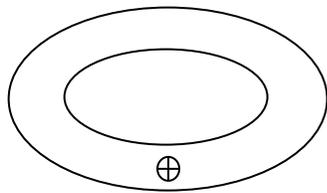
Thinking: (Ask students) “So how about using Codey as the game controller? How will you design the control scheme for your racing game if you using Codey?”

Divide students into groups and have students discuss over the question. The teacher can join the students for discussion and should list all the design ideas on the blackboard for later discussion. It's important to take students' ideas seriously.

(The teacher saying to students) “When you were discussing over the question, I've been thinking about it as well, and an idea came to me. I want the car to run in the same direction as I move. When I lean towards the left, the car moves to the left; when I lean towards the right, the car moves to the right. So, do you have any ideas on how to achieve this effect? Actually, we can make use of Codey's built-in gyroscope here. When you tilt Codey to the left, the car will drive to the left, when you tilt Codey to the right, the car will drive to the right.”

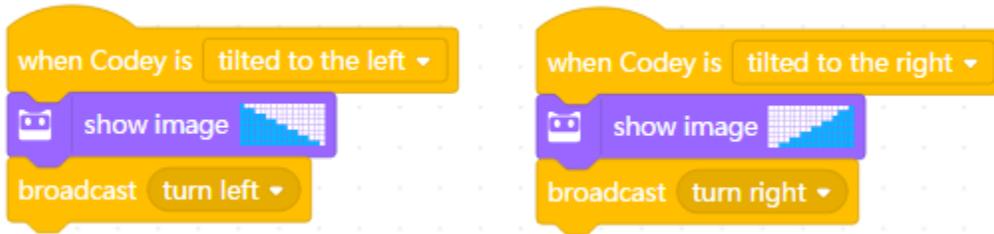
2) Prototyping: Students will know how to use mBlock 5 to design the control scheme for a game.

Physical prototype: The teacher will draw a draft to illustrate his or her own conceptual game design.



Digital prototype: **(The teacher saying to students)** “Let's start to program using mBlock 5 now. Before programming, you should connect Codey to your computer. After that, we will work on the characters and scenes design. If you want to use Codey to control the racing car in mBlock 5, you have to learn about how to use “**Broadcast**” first. [\(Check out the slide for details\)](#)”

Write the following code for Codey:



Write the following code for the character:



3) Playtesting: Students will have a better understanding of Playtesting - a pivotal step in game design.

The teacher instructs students: “Anyone wants to try this game and share with us what you think of it? Is there anything to improve about the game? Or is there anything that you feel not right?”

4) Reiterating & Implementing: Students will know how to reiterate the game prototype and implement it.

The teacher will make modifications based on the feedback from students.

Independent Practice:

It's Your Turn!

1) **Selecting a solution:** (The teacher saying to students) “We’ve just discussed how to make your

racing game more engaging. You came up with so many ideas, but now you have to narrow down the ideas to only one. Then design your own game based on the idea.”

2) **Prototyping:** “Draw a draft or create a prototype based on your idea. Or you can use mBlock 5 to write programs straightaway.”

3) **Playtesting:** “When your game is ready, put your hands up. Then, invite some target players to experience your prototype. Of course, you can invite me to try it.”

4) **Reiterating & Implementing:** “Fix bugs based on the players’ feedback. Perfect your game.”

Share:

Presentation

Allow each student to share his or her own game project with the class and tell them to invite classmates to experience their game.

[At the end of this session, let students vote for the best design of the day.](#)

Differentiation & Modification

For advanced students	For struggling students	Strategies to maximize engagement
Introducing more possibilities into the stage design: 1)Using “variable” in the program to replace the “broadcast”; 2) Making the race track more exquisite; 3)Diversifying the characters.	Simplifying the tasks: 1)Using the button as an interactive scheme; 2)Making a simple race track; 3)Keeping the character (racing car) simple.	In the “share” session, the teacher will allow students to try all the games and then have students vote for the best game of the day.

Comments:

Teachers' Reflections: