

## Lesson 2.7: Game Levels

### Objectives

In this lesson, students will:

- ❖ Take users' skill levels into consideration by adding different levels to a game
- ❖ Practice the use of conditionals, variables and soliciting user input.
- ❖ Build upon and modify an existing completed project.

### Agenda

1. Game Levels	10 mins
2. Student Activity: Adding Levels to a Game	30 mins
3. Wrap Up and Reflections	10 mins

### Preparation

- Projector for class demonstration
- Print student activity worksheet (one per student or student pair)

### Resources & Links

Existing Game Projects:

- Race Track:  
<https://scratch.mit.edu/projects/309997531>
- Flying through obstacles:  
<https://scratch.mit.edu/projects/282848597>
- Chase Game:  
<https://scratch.mit.edu/projects/313572239>

## 1. Game Levels



Display your screen and engage students in an interactive class discussion and demonstration:

What do you notice about this game? (**answer:** It has different levels)



Image source: <https://portforward.com/games/walkthroughs/Lemmings/Trial-Level-1.htm>



What is the purpose of having different levels in a game?

Levels allow players of different skill levels to play a game. Choosing the right level for a player can make the game more enjoyable and less frustrating. They also serve to keep a player's interest in the game by choosing a level that is more challenging.

### **Student Activity:**

Display or write the following types of games on the board and ask students to discuss with their elbow partner ideas of what different levels could look like or mean for each of the games listed.

- Racing game
- Navigate a character through obstacles
- Chasing game

**Prompt** students to share their ideas with the class.



**Continue** the class **discussion** and **demonstration**:

How can we ask the user at what level they want to play a game in Scratch?

Possible answers: By asking a question using the **Ask** block, or by using buttons like in the example we saw, or by using a slider variable and using a min and max value. If we use a slider we would want to set the minimum game level and the maximum game level.

## 2. Student Activity: Adding Levels to a Game



**Display your screen and engage** students in an interactive class discussion and demonstration:

Before the game starts, we need to ask the user at what level they want to play. Once we have the level, we need to choose different features for the game. Maybe level 1 has a different background, or objects move faster.

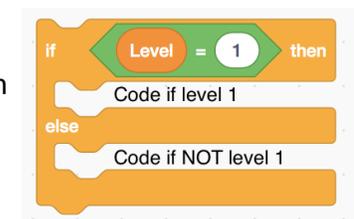
To do that we will need a conditional statement.

**Ask** students what a conditional statement is.

**Answer:** A conditional statement performs different actions depending on whether a boolean condition evaluates to true or false as shown to the right.



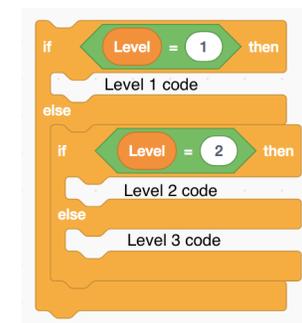
Assuming a game has 2 levels, once we know the level, the game can begin at the chosen level. For this we will use an **if-then-else conditional statement**.



A single if-then-else statement works when we have just 2 levels. What if we wanted to add a third level?

What would we need to add?

**Answer:** Another **if-then-else statement**.





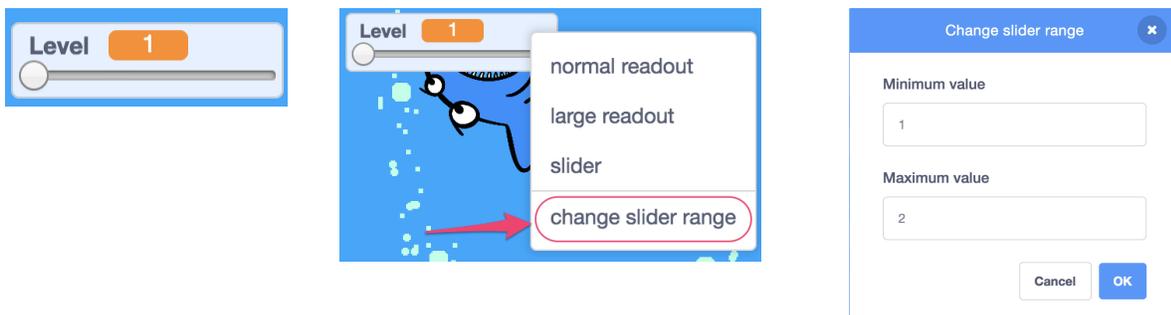
Explain to students that they will be adding levels to an existing game. The game itself will be one level and they will be adding another level. The user chooses which level to play.



**Demonstrate** the use of a slider if students are not familiar with it. Students can also use buttons to choose a level in their game.

**How to use a slider:**

Create a variable called **Level** and select it so it is displayed on the stage. To set the minimum and maximum values on a slider variable, right click on the variable on the stage, select **change slider range**, and then set the minimum and maximum value.



**Distribute** the student activity worksheet **Adding Levels to Games**.

You may need to ensure students don't spend too long choosing which game they want to work on and limit the game choosing to a few minutes.

**3. Wrap Up and Reflections**



**Reflection Points:**

- Why are levels useful in a game? (consider the user's different skill levels, keep the player's interest).
- What was challenging about today's activity?
- What is a conditional statement?
- What was fun about today's activity?

## Student Activity: Adding Levels to a Game

What to do:	Using/Details:
<p>Choose one of the games that you want to add levels to.</p> <p><b>Remix</b> the project and <b>save</b> it.</p>	<p>Race Track: <a href="#">309997531</a></p> <p>Flying through obstacles: <a href="#">282848597</a></p> <p>Chase Game: <a href="#">313572239</a></p>
<p>Add an option for the user to select from 2 levels.</p> <p>Add a short description of what each level is about in the Project Page.</p>	
<p>The existing game will be one of the levels. Decide if your new level will be more challenging or easier.</p> <p>Add the code for the new level.</p>	
<p>Add a comment to the code that explains the test of which level to use.</p>	
<p>If working with a partner, share the project.</p> <p>The partner whose account was not used can remix and save the project into their account.</p>	
<p><b>Bonus Activity: Add a third level.</b></p>	