Rebounder

Code the Player

Materials

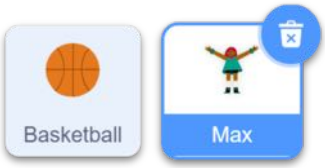
- Computer or Chromebook
- Internet connection
- Web browser

Overview

In this second part of making the rebounder game, you will complete making the code for the player sprite. You will write code to make the player move, animate, and count the rebounds that you have caught!

Let's Get Started

Open a web browser and go to **scratch.mit.edu**. Log in to your account and go to **my stuff** by clicking on your profile menu in the top right. Open the rebounder project that you have already started.
You will be coding the player, so make sure that you have the player sprite selected.



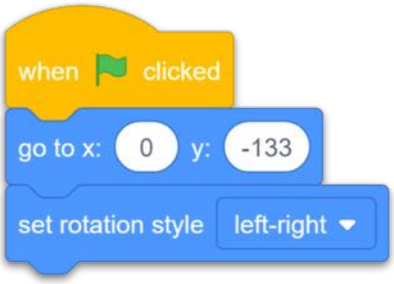
Get moving

1

Add a **green flag** event to start moving the player when the left and right **arrow keys are pressed**. Pay close attention to the negative numbers!

2

Add another green flag event to set an initial position for the player sprite and set the **rotation style** so that the player doesn't go upside down when you change direction!



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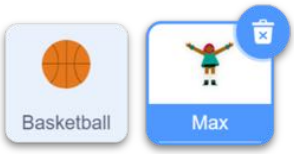
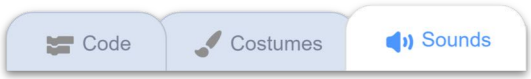
Make some noise!

3 Add some sneaker squeak sounds to the sprite.

a Make sure you have the player sprite selected in the sprites pane.



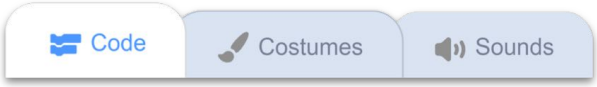
b Select the **sounds** tab above the blocks palette.



c Click on the icon of the speaker in the bottom left to choose a sound from the Scratch **sound library**.

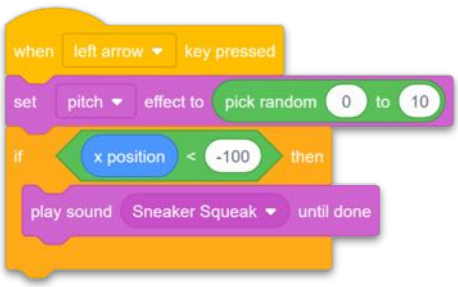
d This sound will be for the player's sneakers squeaking when you change direction. Choose the sound labeled **sneaker squeak**.

e Return to the **code** tab.



4 Add some code to make the sounds play when the player changes directions.

a Add a keypress event for when the **left arrow key is pressed**. Attach the blocks of code to randomize the **pitch**, and an **if < > then** block that will make the sound only play while you are in the outer portions of the stage.



b **Duplicate** the code from the previous step by right clicking the top block of code and choosing duplicate from the menu. Change the values to:

- **Right arrow key pressed**
- The **greater than** operator block

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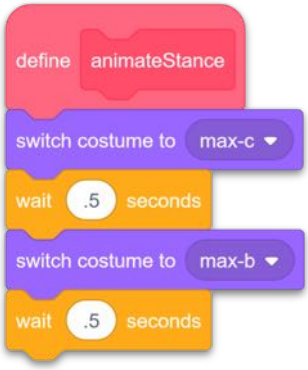
Move your arms.

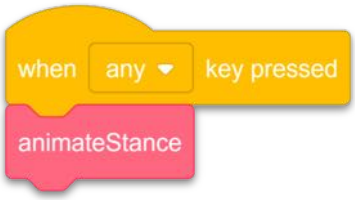
5 Animate the stance of the player sprite.

a Make a new block in the **My Blocks** palette. This will be for animating the stance of the player, so **animateStance** is a good name.

b Define what the new animateStance block does. Add two switch costume blocks for the costumes **max-c** and then **max-b**. Add a **wait (.5) seconds** block after each switch costume block.



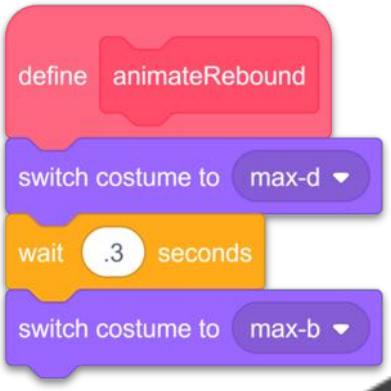
c Add a **when any key pressed** event block. Attach the **animateStance** block to call the procedure when any key is pressed.



6 Animate the rebound

a Make a new block in the **My Blocks** palette. This will be for animating the stance of the player, so **animateRebound** is a good name.

b Define what animateRebound does by adding two switch costume blocks for the costumes **max-d** and then **max-b**. Add a **wait (.3) seconds** block after the *first* switch costume block.



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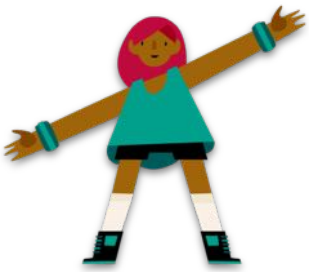
Make it count.

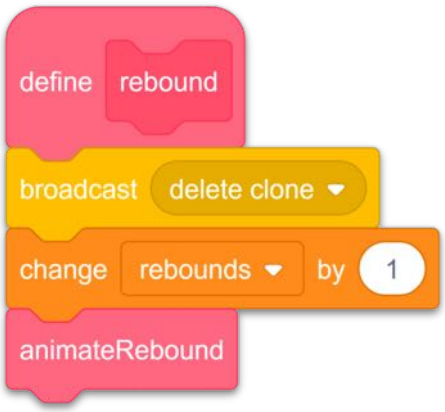
7 Make the procedure for the rebound.

a Make a new block in the **My Blocks** palette. This will be for animating the stance of the player, so **animateStance** is a good name.



b Define what the new rebound block does.

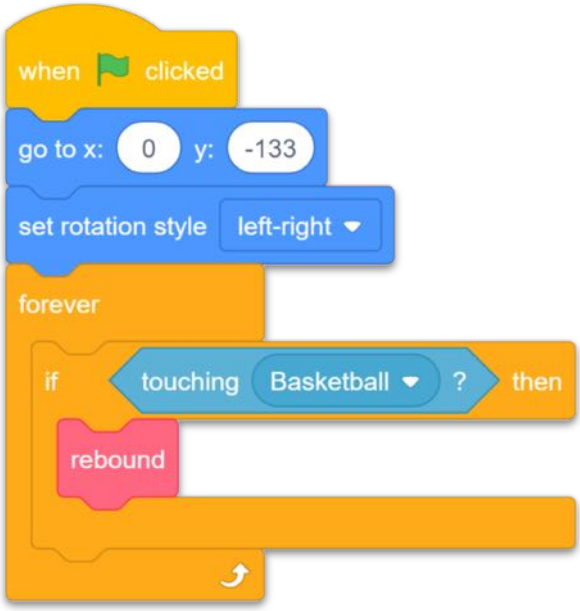
- Add a **broadcast delete clone** block so the cloned basketball is deleted.
- Add a **change rebounds by 1** variable block so the score goes up when you catch a rebound.
- Add the **animateRebound** block to call the animateRebound code. This will make it look like the sprite is catching the rebound.



8 Check to see if a rebound is happening.

As long as the game is going, you need to ask the computer if the player sprite is touching the basketball sprite.

- Attach a **forever** loop and place an **if < > then** block inside the loop.
- Place a **<touching basketball>** sensing block in the if < > then block.
- If the computer returns the answer yes, or true, then call the rebound code by adding the **rebound** block that you made in the previous step.



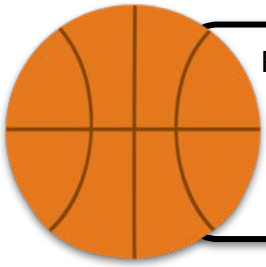
Get playing.

9

Great work! Check for bugs by playing the game.

You should now have a working game! Play the game to see if you have any bugs. If you do, go back through the steps and be a code detective to find out where the code is going wrong.

- Pay attention to small details like decimals or negatives in front of numbers.
- Look at blocks that have drop down menus. Do the values in those blocks match the pictures in the steps?
- Be patient! Finding bugs is *hard*. You can always take a short break and come back with a fresh brain.



Post a screen capture of your project, or a picture of you coding and use **#spursgivecoding**

Get *your* body moving!

Playing basketball is fun and good exercise. Make up your own drill to practice rebounding a basketball in real life. What are all of the steps in your rebounding drill? Could you make a drill to practice other fundamentals like dribbling or passing skills? Have fun!

Scratch is a project of the Scratch Foundation, in collaboration with the Lifelong Kindergarten Group at the MIT Media Lab. It is available for free at https://scratch.mit.edu