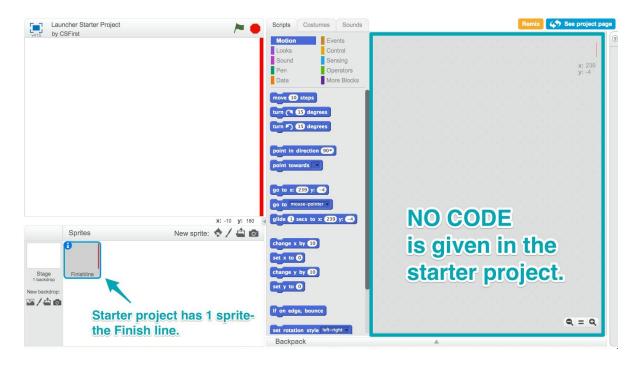
Activity 6: Launcher Game

Video 1: Launcher Games and Randomness

In this video, club members will:

- 1. Open the starter project on the CS First Page.
- 2. Remix the project and sign in to Scratch.
- 3. Add a sprite and shrink it.

NOTE: Club members will not code any parts of this project until after watching the second video.



Video 2: Launch a Sprite

In this video, club members will:

- 1. Move the sprite forward when the spacebar is pressed.
- 2. Use a "repeat until" and a "touching finish line" block to repeat moving forward until the sprite reaches the finish line.
- 3. Set the starting position using a "go-to" block.

Costume for the Player sprite:



```
when space very pressed

repeat until touching Finishline ?

move 10 steps

go to x: -22 y: 3
```

Video 3: Turn the Sprite Left and Right

In this video, club members will:

- 1. Create arrow key press events.
- 2. Program the arrow keys to turn the sprite right and left.
- 3. Use a "repeat-until" block, a "key-press sensing" block, and a "not" block to keep turning the sprite until the arrow keys are no longer being pressed.

Costume for the **Player** sprite:



```
when left arrow very pressed?

repeat until not key left arrow pressed?

turn (15) degrees

when right arrow very key pressed

repeat until not key right arrow very pressed?

turn (15) degrees
```

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Video 4: Spawning Enemies

In this video, club members will use:

- 1. Add an enemy sprite.
- 2. Create a clone of the enemy when the flag is clicked.
- 3. Add a "when I start as a clone" event (found in control) to the code you already created for bouncing the sprite.
- 4. Add a "hide" block to the end of the flag event.
- 5. Add a "show" block to the beginning of the "when I start as a clone" event.

Costume for the **Enemy** sprite:



```
when clicked

hide

repeat 10

create clone of myself
```

```
when I start as a clone
show

turn pick random 1 to 360 degrees

forever

move 10 steps

if on edge, bounce
```

Video 5: Keeping Score

In this video, club members will use:

- 1. Create a "score" variable for the player sprite.
- 2. Make the score go up by 1 when the sprite touches the finish line.
- 3. Create enemy clones and program the sprite so it stops moving if it touches an enemy.
- 4. Make the game harder by having it create an enemy clone every time a point is scored.

Costume for the **Player** sprite:



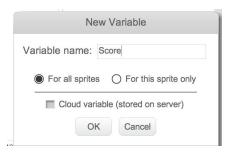
Click "Data" menu.



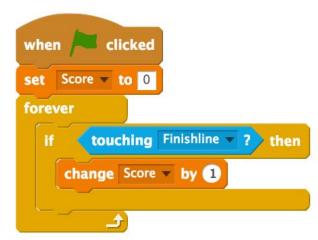
Click "Make a Variable."



Name the variable and click "OK."



Add this code.



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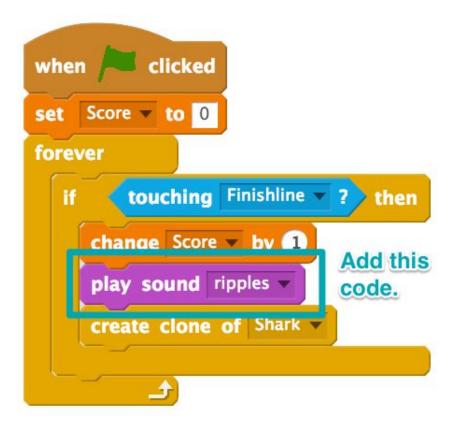
Add-On: Finish Line Cheer

In this video, club members will use:

- 1. Add a sound that will play when a player touches the finish line.
- 2. Add a "play sound" Block.

Costume for the **Player** sprite:





Add-On: Play with a Friend Option 1

In this video, club members will use:

- 1. Copy the player 1 sprite.
- 2. Change player 2's appearance.
- 3. Change player 2's key press events.
- 4. Change the starting position of player 2.
- 5. Create a score for player 2.
- 6. Program player 2's score to start at 0.

Costume for the **Player** sprite:



NOTE: Make sure students change the boxed values when they duplicate the code for their sprite.

```
repeat until not key d pressed?

turn ( 15 degrees
```

```
when clicked

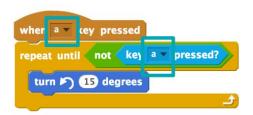
set player 2 score v to 0

forever

if touching Finishline v? then

change player 2 score v by 1

create clone of Shark v
```



```
when space wey pressed

repeat until touching Finishline ? cr touching Shark ?

move 10 steps

go to x: -222 y: -100
```

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Add-On: Play with a Friend Option 2

In this video, club members will:

- 1. Add a key pressed event to your enemy sprite's script area.
- 2. Make your enemy sprite turn left.
- 3. Duplicate your code stack to program the enemy sprite to turn right.

Costume for the **enemy** sprite:



```
when a key pressed

repeat until not key a pressed?

turn (5) 15 degrees
```

```
when d v key pressed

repeat until not key d v pressed?

turn (15) degrees
```

Add-On: Shrinking Finish Line

In this video, club members will:

- 1. Add "change size" blocks and "set size" blocks to your program.
- 2. Make your finish line shrink using negative numbers.
- 3. Reset the size of your finish line.

Costume for the **Finish line** sprite:



```
when clicked

set size to 100 %

if touching Fish3 ? then

change size by -10
```

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Add-On: Bonus Points!

In this video, club members will:

- 1. Create a bonus sprite and make it appear randomly.
- 2. Reset the bonus sprite's location to its starting position.
- 3. Allow a player to earn points by touching the bonus sprite.

Add a new **bonus** sprite:



```
when clicked

hide

go to x: -200 y: -10

forever

if pick random 1 to 10 = 10 then

show

glide 1 secs to x: -96 y: 24

hide

go to x: -200 y: -10
```

Costume for the **player** sprite:



```
when clicked

set Score v to 0

forever

if touching Finishline ? then

change Score v by 1

create clone of Shark v

if touching Apple ? then

change Score v by 1

Add this code.
```

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Add-On: Changing Level Design

In this video, club members will:

- 1. Add more backdrops to the project.
- 2. Add backdrop code to the player 1 sprite, and make the background switch forever.

NOTE: Final code for club members should look very similar to what is below. Values may vary in the different blocks.

Costume for the **player** sprite:



```
when clicked

set Score v to 0

forever

if touching Finishline ? then

change Score v by 1

create clone of Shark v

switch backdrop to next backdrop v
```