Bunny Hop Adventure

Part 1

Play the game we are building:
click

Today’s Game

Challenge: Build a platform game complete with hero, enemies, rewards, and multiple levels.

Goal: Impress our guests

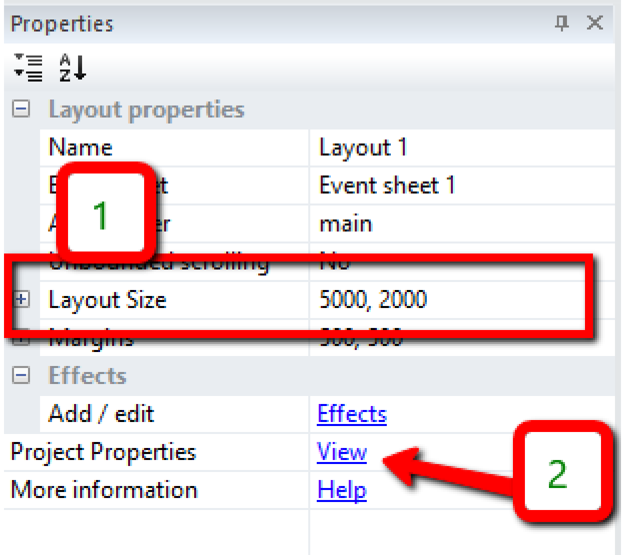
Features:

- A hero with multiple animations
- An enemy that you need to jump on or shoot
- Gens to collect
- More!

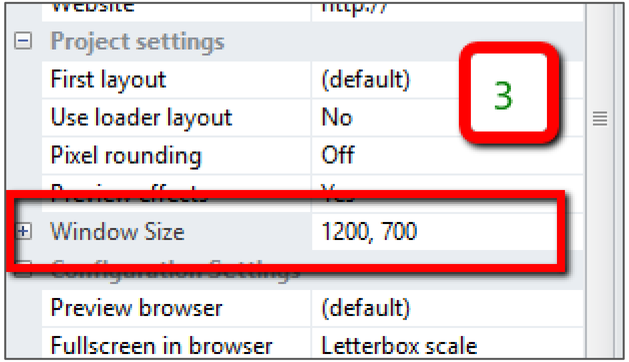
Layout & Windows Size

- Layout (5000,2000) [1]

- Window size (1200, 700) [2 & 3]



Layout properties	
Name	Layout 1
E t	Event sheet 1
A er	main
Unbounded scrolling	No
Layout Size	5000, 2000
Margins	500, 500
Effects	
Add / edit	Effects
Project Properties	View
More information	Help



Website	http://
Project settings	
First layout	(default)
Use loader layout	No
Pixel rounding	Off
Preview effects	Yes
Window Size	1200, 700
Configuration Settings	
Preview browser	(default)
Fullscreen in browser	Letterbox scale

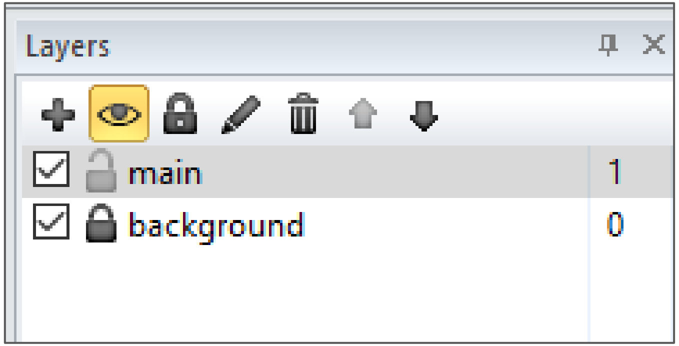
Background Templates

- Create ***TiledBackground*** and load "**level_01_background.png**"
  - Set ***Position*** to **0,0** & ***Size*** to **5000,2000**
  - Set ***Name*** to **background**

- Create another ***TiledBackground*** and load "**level_01_template.png**"
  - Set ***Position*** to **0,0** & ***Size*** to **5000,2000**
  - Set ***Name*** to **backgroundtemplate**
  - Set ***Opacity*** to **50**
  - Set ***Initial visibility*** to **invisible**

Setup Layers

- Rename current layer to ***background***
- Click “+” to add another layer
  - Name new layer ***main***
- Lock ***background*** layer (Press the ‘lock’ icon)
- Click ***main*** layer to make it the active layer

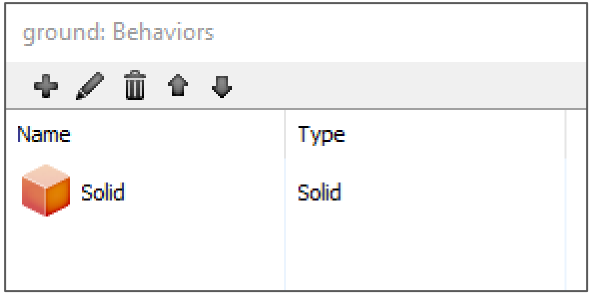


Layers

☑	main	1
☑	background	0

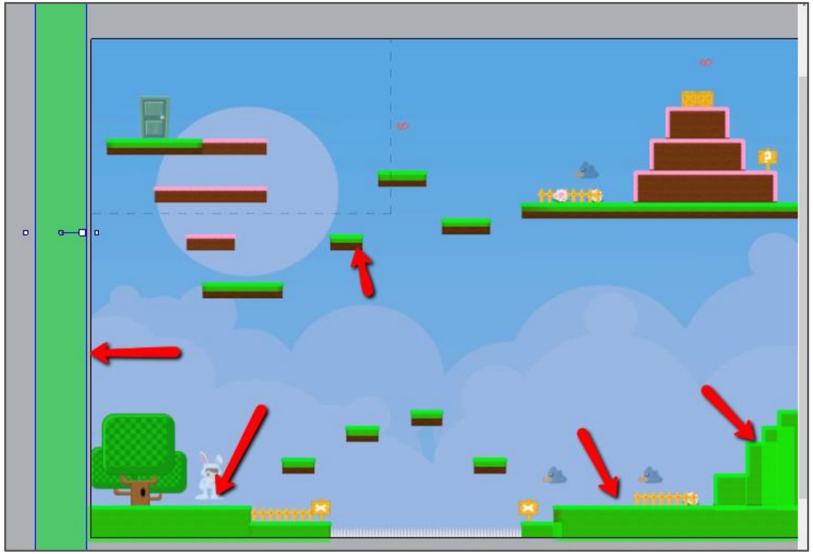
Adding Ground

- Create a new ***sprite***
  - Give it a solid color (green)
  - ***Name*** it **ground**
  - Set ***initial visibility*** to **Invisible**
  - Add ***behavior*** **solid**
- Setup ground throughout layout



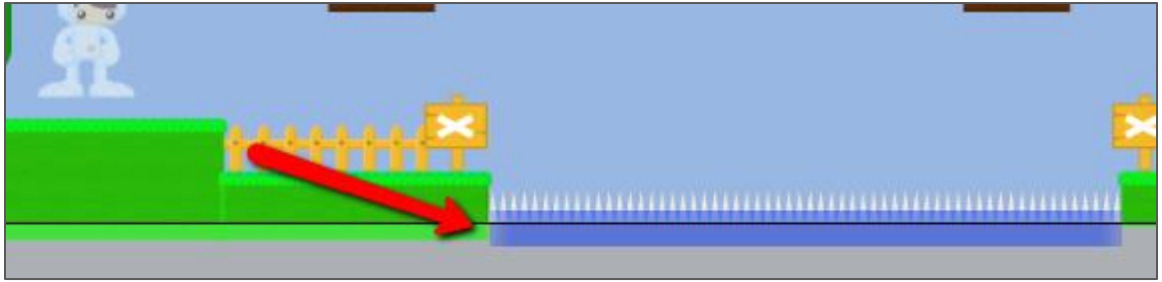
ground: Behaviors

Name	Type
Solid	Solid



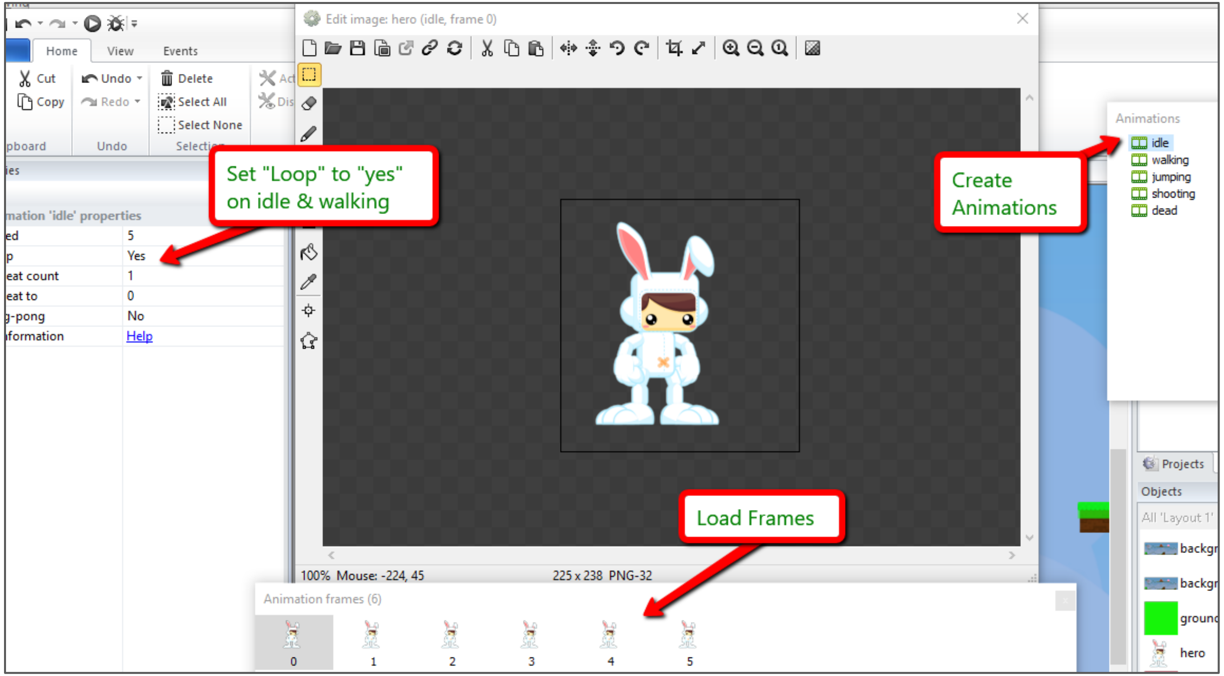
Add Spikes - they hurt!

- Create a new ***sprite***
  - Give it a solid color (blue)
  - ***Name*** it **spikes**
  - Set ***initial visibility*** to **Invisible**
- Set up where there are spikes



Create our Hero

- Create a new ***sprite***
- Load animations for **<u>idle, walking, jumping, shooting,</u>** and **<u>dead</u>**
- ***Name*** it **<u>hero</u>**
- Set ***loop*** to **<u>yes</u>**
  - **<u>idle & walking</u>**



Set "Loop" to "yes" on idle & walking

Create Animations

Load Frames

mation 'idle' properties

ed	5
p	Yes
eat count	1
eat to	0
g-pong	No
formation	Help

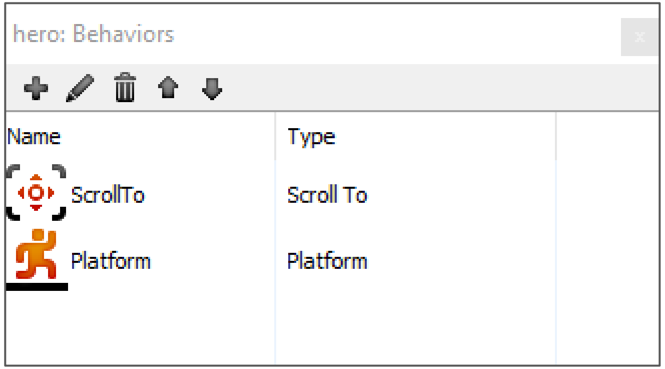
Edit image: hero (idle, frame 0)

100% Mouse: -224, 45 225 x 238 PNG-32

Animation frames (6)

Create our Hero

- Add **Behaviors ScrollTo** and **Platform**

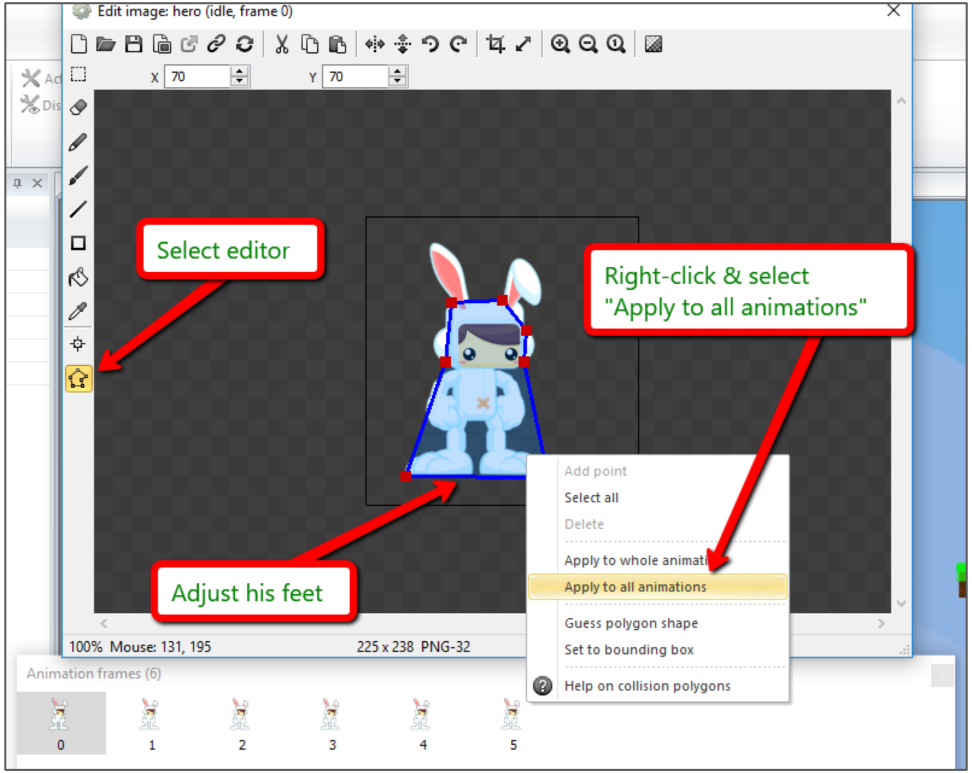


hero: Behaviors

Name	Type
ScrollTo	Scroll To
Platform	Platform

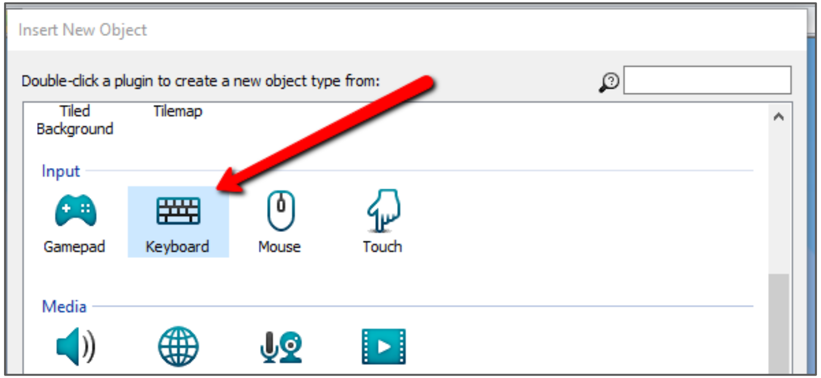
Create our Hero

- Adjust collision points



Create our Hero

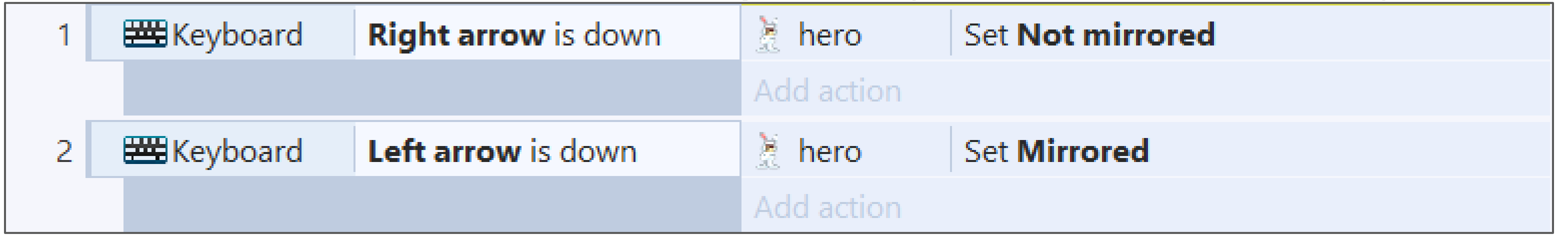
- ***Insert new object***, add the **keyboard** object



Insert New Object

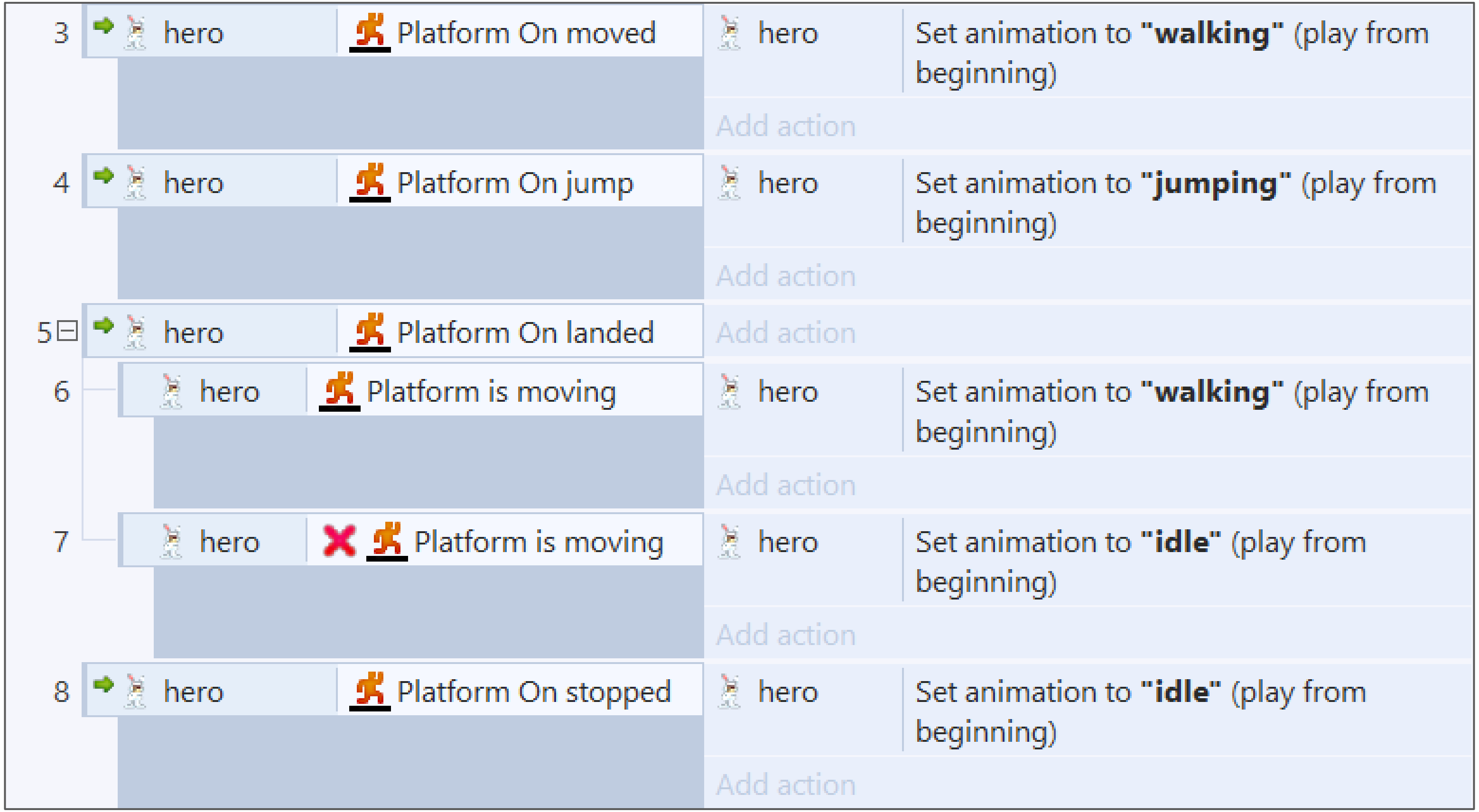
Double-click a plugin to create a new object type from:

- Add event to mirror our hero depending on the direction keys



1	Keyboard	**Right arrow** is down	hero	Set **Not mirrored**
			Add action	
2	Keyboard	**Left arrow** is down	hero	Set **Mirrored**
			Add action	

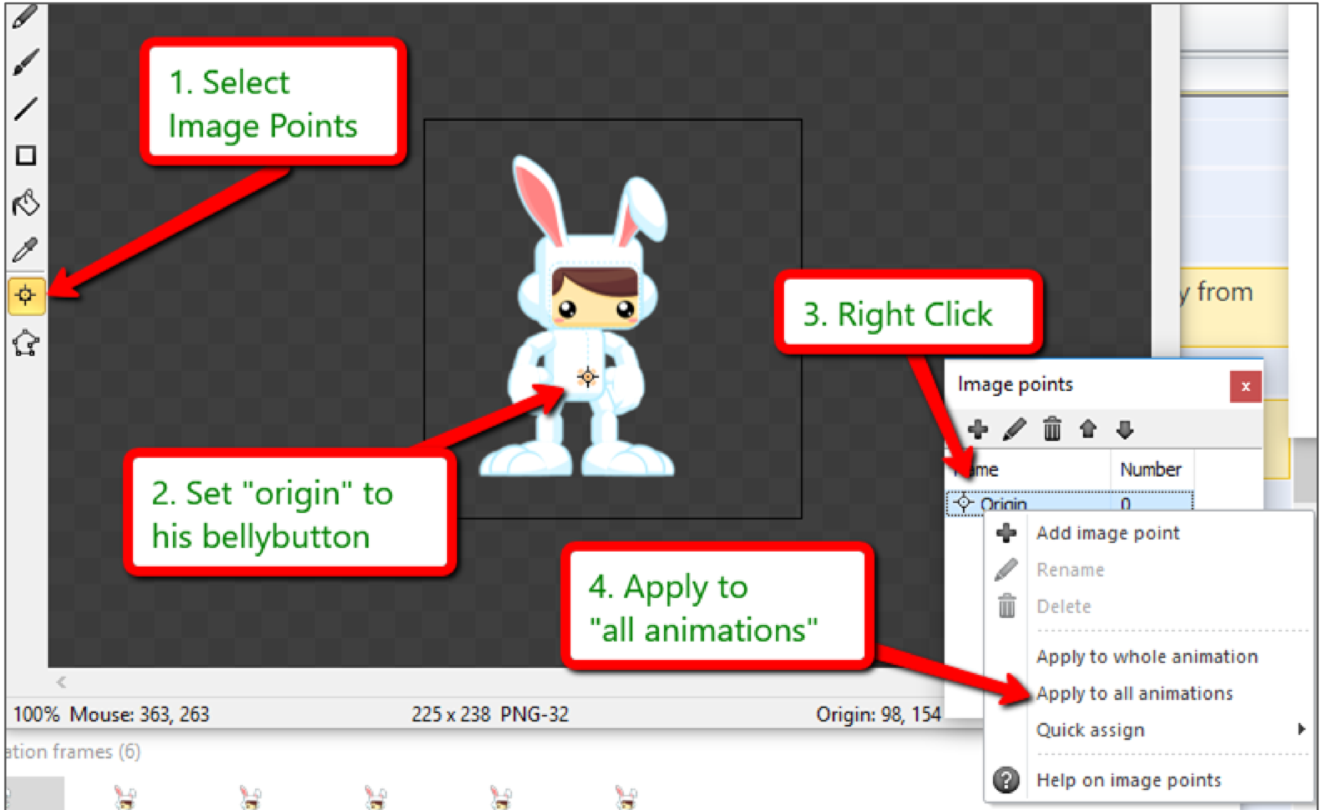
Hero Animations



3	hero	Platform On moved	hero	Set animation to "**walking**" (play from beginning)
				Add action
4	hero	Platform On jump	hero	Set animation to "**jumping**" (play from beginning)
				Add action
5 ⊟	hero	Platform On landed		Add action
6	hero	Platform is moving	hero	Set animation to "**walking**" (play from beginning)
				Add action
7	hero	✗ Platform is moving	hero	Set animation to "**idle**" (play from beginning)
				Add action
8	hero	Platform On stopped	hero	Set animation to "**idle**" (play from beginning)
				Add action

Hero Animations

- Adjust his origin point so that he doesn't jerk-around when he turns



1. Select Image Points

2. Set "origin" to his bellybutton

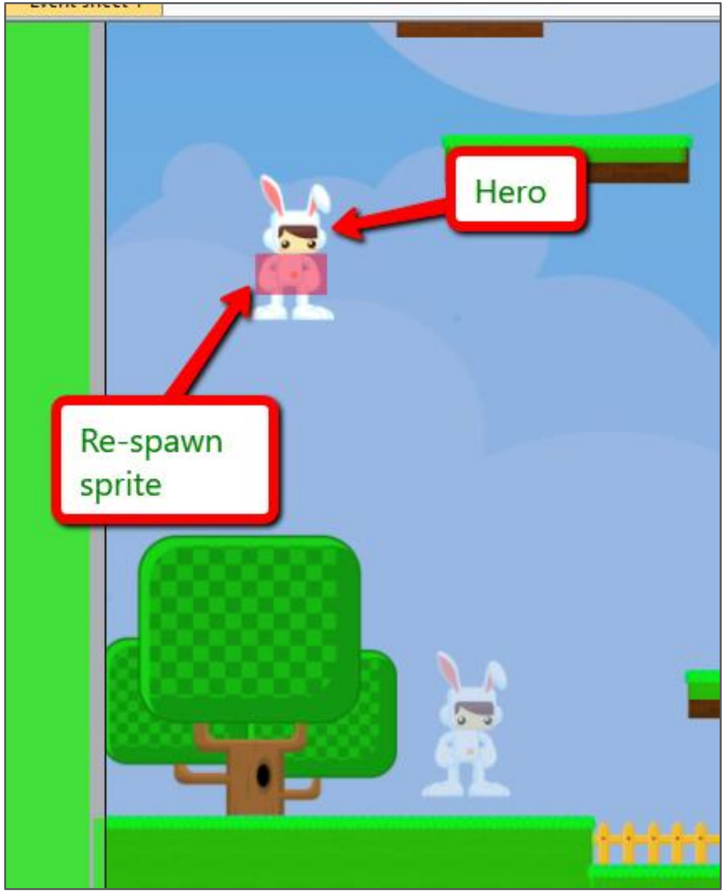
3. Right Click

4. Apply to "all animations"

100% Mouse: 363, 263   225 x 238 PNG-32   Origin: 98, 154

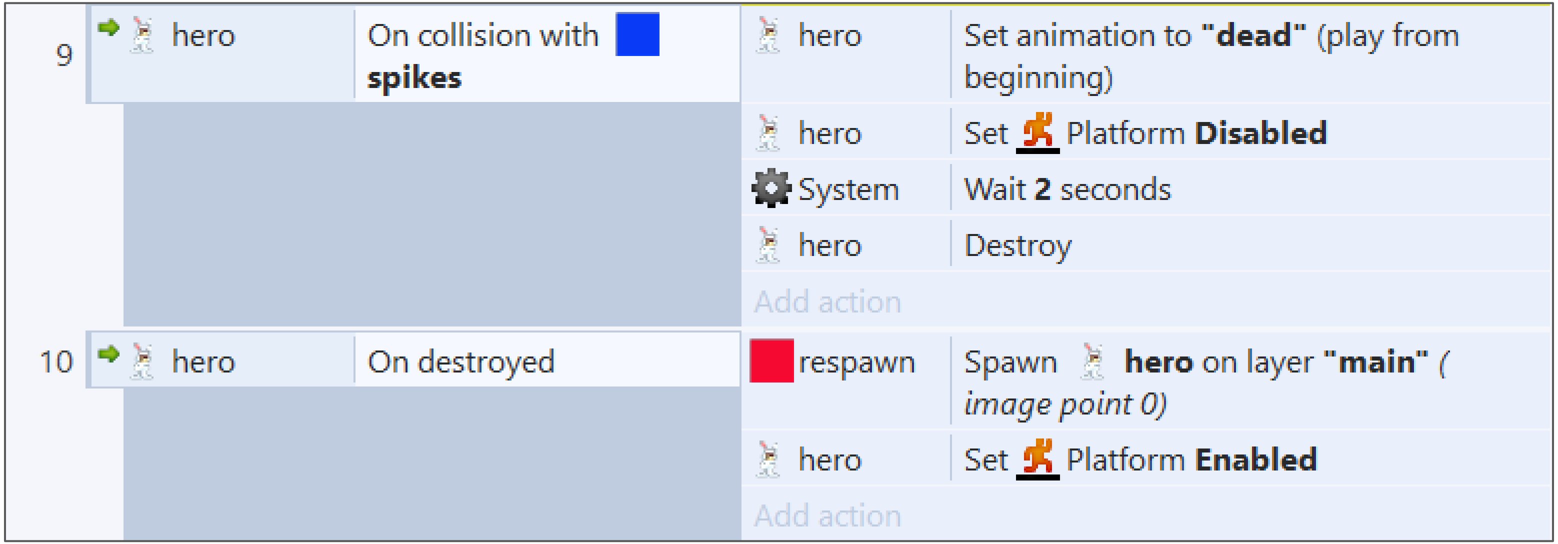
Re-spawn our Hero

- Insert a new object, ***sprite***
  - Give it a **solid color**
  - Name it **respawn**
  - Set ***initial visibility*** to **invisible**
- Move our Hero to the re-spawn point



Re-spawn our Hero

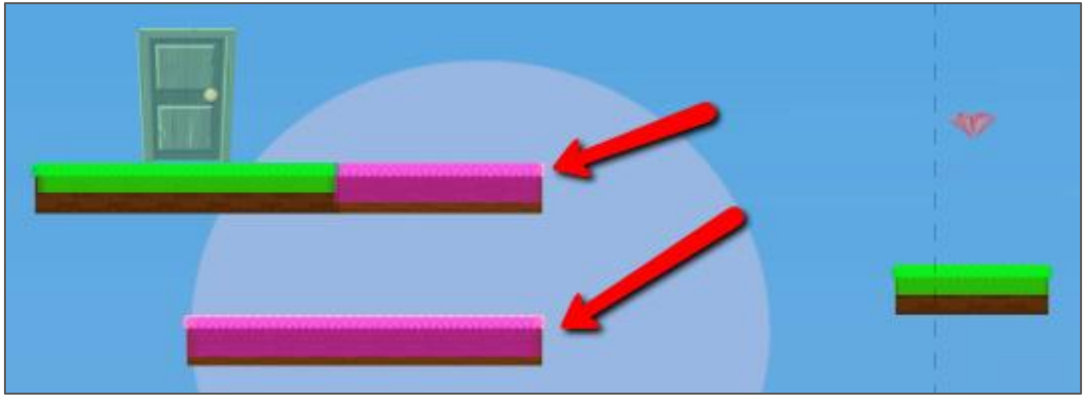
- Add events. (more ways to die later!)



9	hero	On collision with 🟦 **spikes**	hero	Set animation to **"dead"** (play from beginning)
			hero	Set Platform **Disabled**
			System	Wait **2** seconds
			hero	Destroy
			Add action	
10	hero	On destroyed	🟥 respawn	Spawn **hero** on layer **"main"** (*image point 0)*
			hero	Set Platform **Enabled**
			Add action	

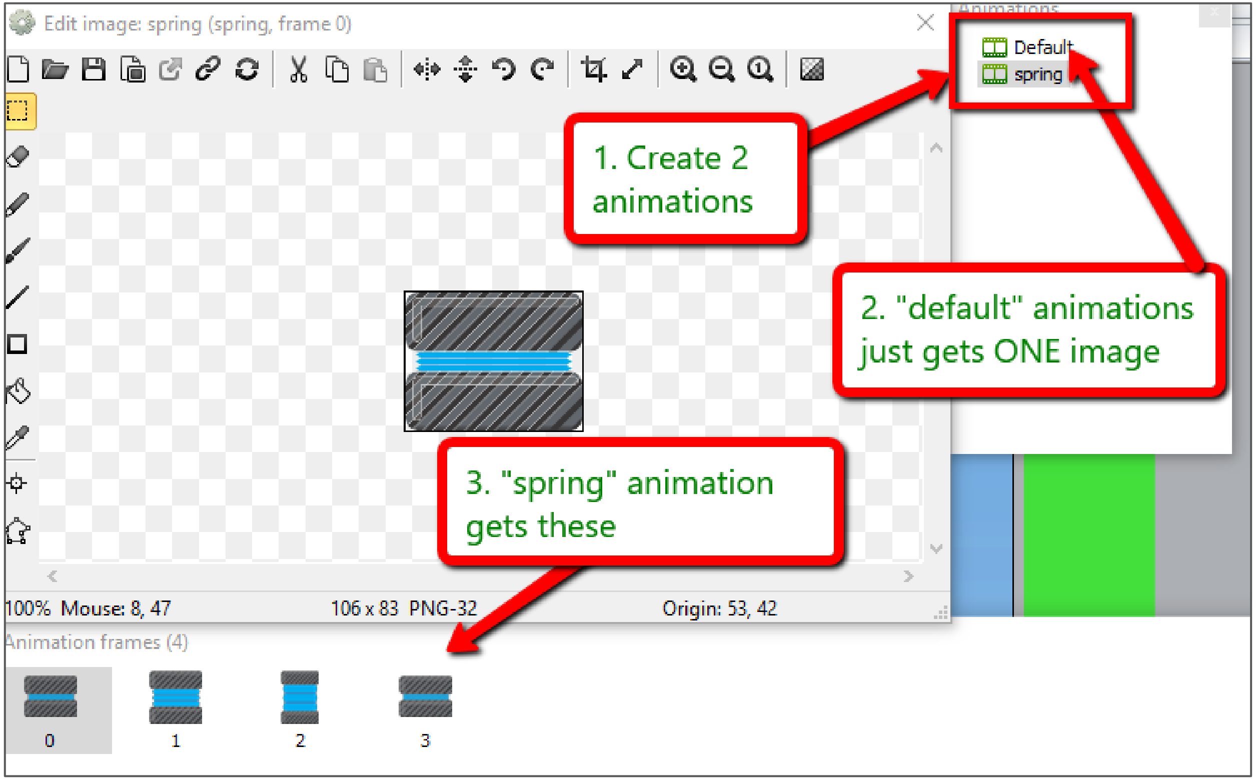
Adding “jumpthru” blocks

- Create a new ***sprite***
  - Give it a solid color (pink)
  - ***Name*** it **jumpthru**
  - Set ***initial visibility*** to **Invisible**
  - Add **jumpthru** behavior
- Set up where there are jumpthru blocks (the pink ones!)



Adding Spring

- Create a new ***sprite***
- Create 2 animations
- ***Name*** it **spring**



Edit image: spring (spring, frame 0)

1. Create 2 animations

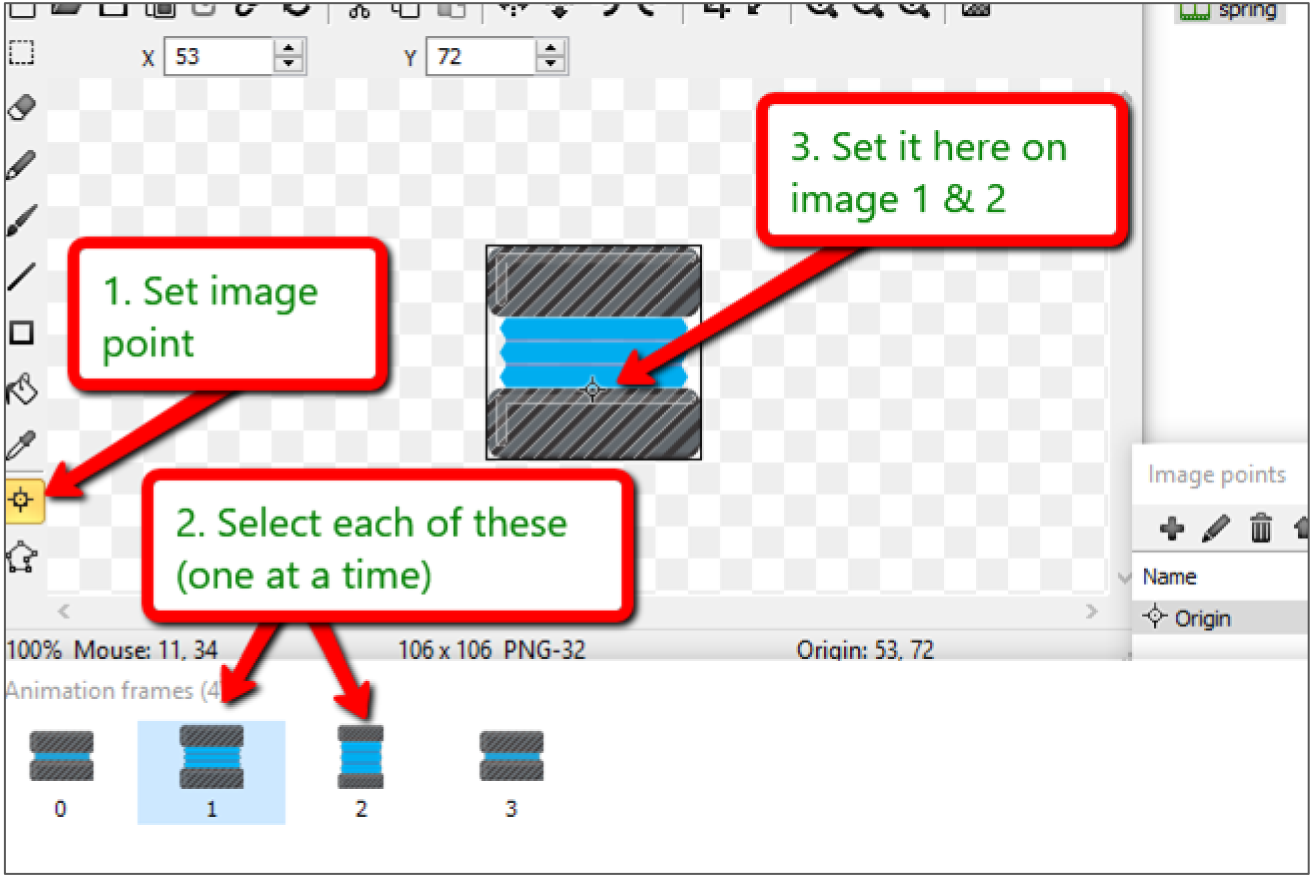
2. "default" animations just gets ONE image

3. "spring" animation gets these

100% Mouse: 8, 47 106 x 83 PNG-32 Origin: 53, 42

Adding Spring

- Adjust the ***origin*** image point



1. Set image point

2. Select each of these (one at a time)

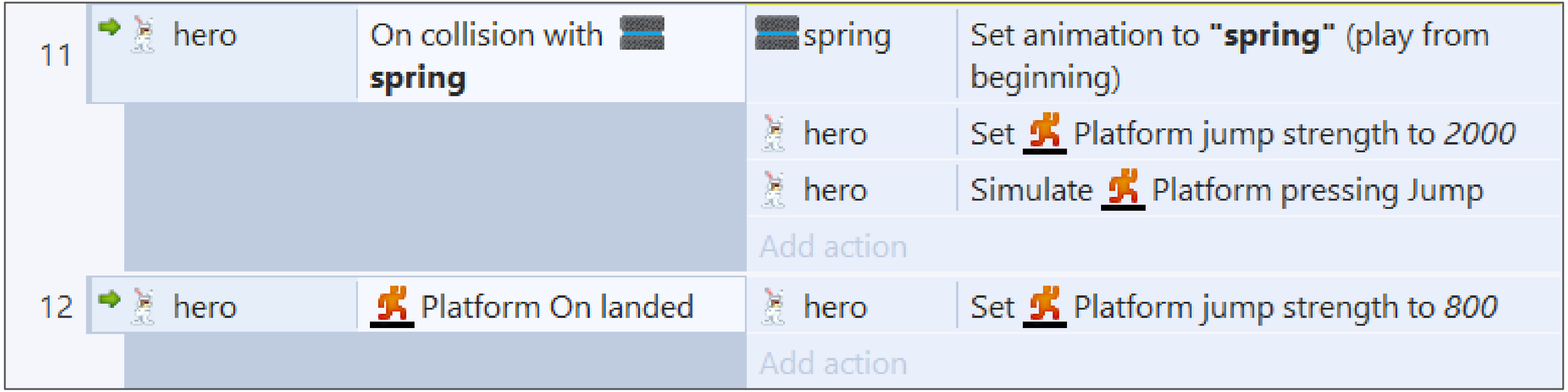
3. Set it here on image 1 & 2

X 53 Y 72

100% Mouse: 11, 34 106 x 106 PNG-32 Origin: 53, 72

Adding Spring

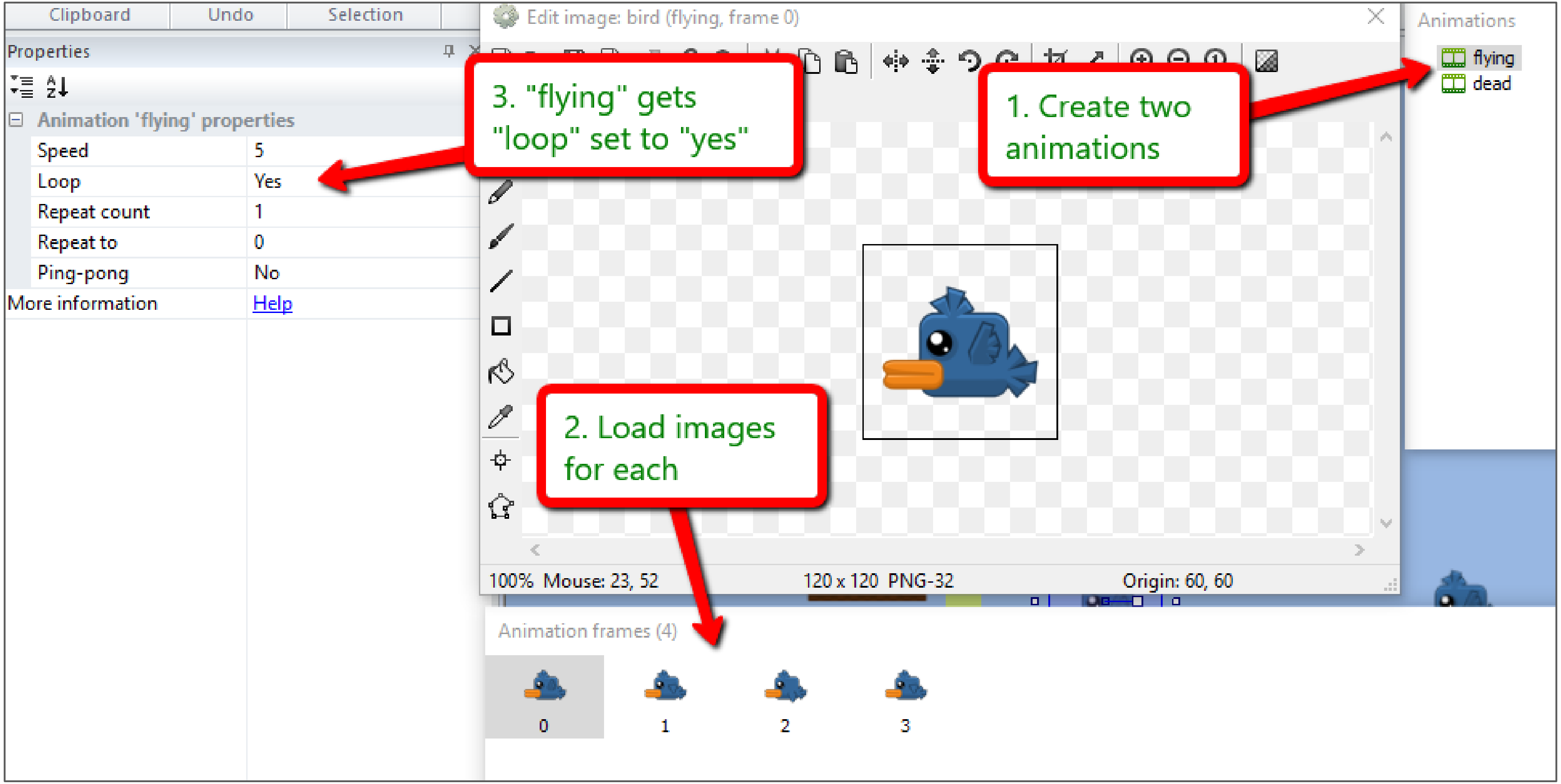
- Add events for the spring



11	hero	On collision with **spring**	spring	Set animation to **"spring"** (play from beginning)
			hero	Set Platform jump strength to *2000*
			hero	Simulate Platform pressing Jump
			Add action	
12	hero	Platform On landed	hero	Set Platform jump strength to *800*
			Add action	

Gaming Bootcamp of South Dakota

Adding the Bird enemy



Animation 'flying' properties

Speed	5
Loop	Yes
Repeat count	1
Repeat to	0
Ping-pong	No
More information	Help

100% Mouse: 23, 52 120 x 120 PNG-32 Origin: 60, 60

Animation frames (4)

1. Create two animations

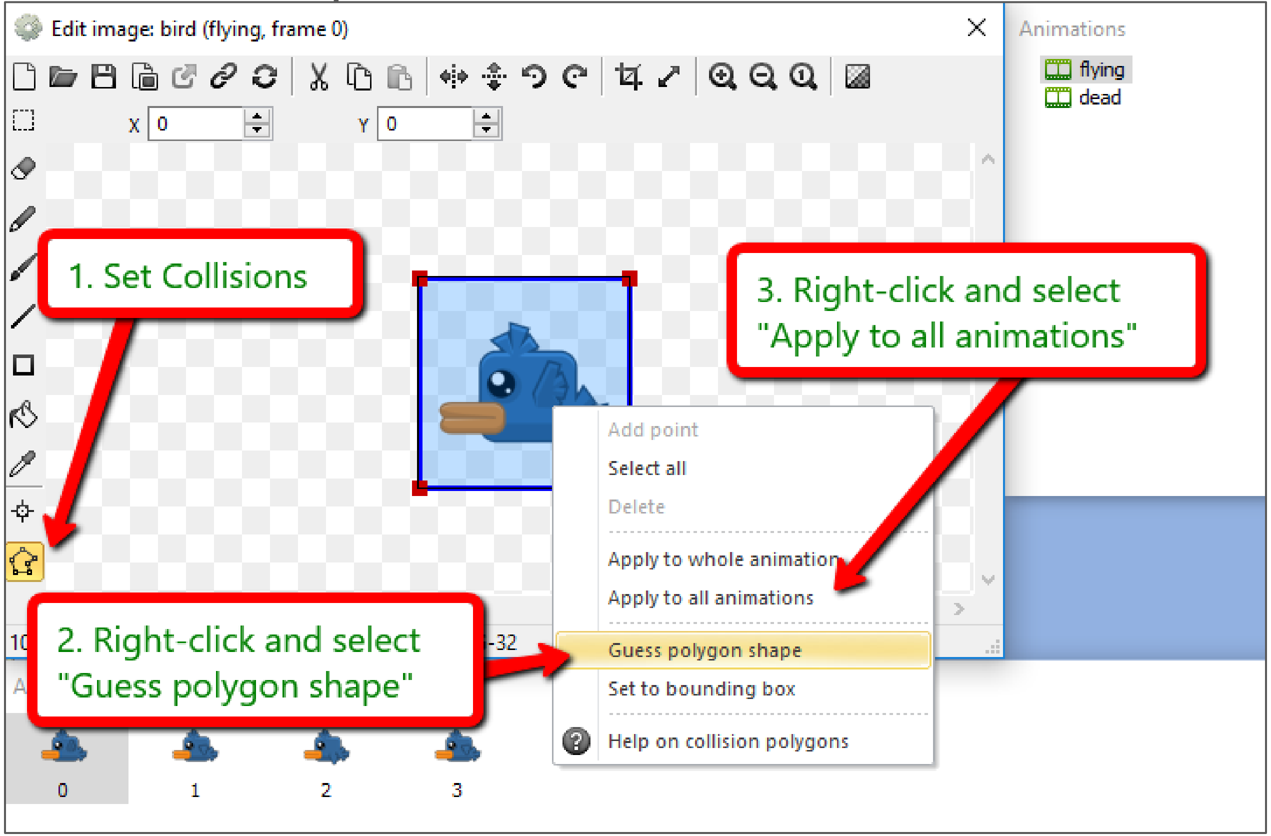
2. Load images for each

3. "flying" gets "loop" set to "yes"

Gaming Bootcamp of South Dakota

Adding the Bird enemy

- Adjust the “collision points”



1. Set Collisions

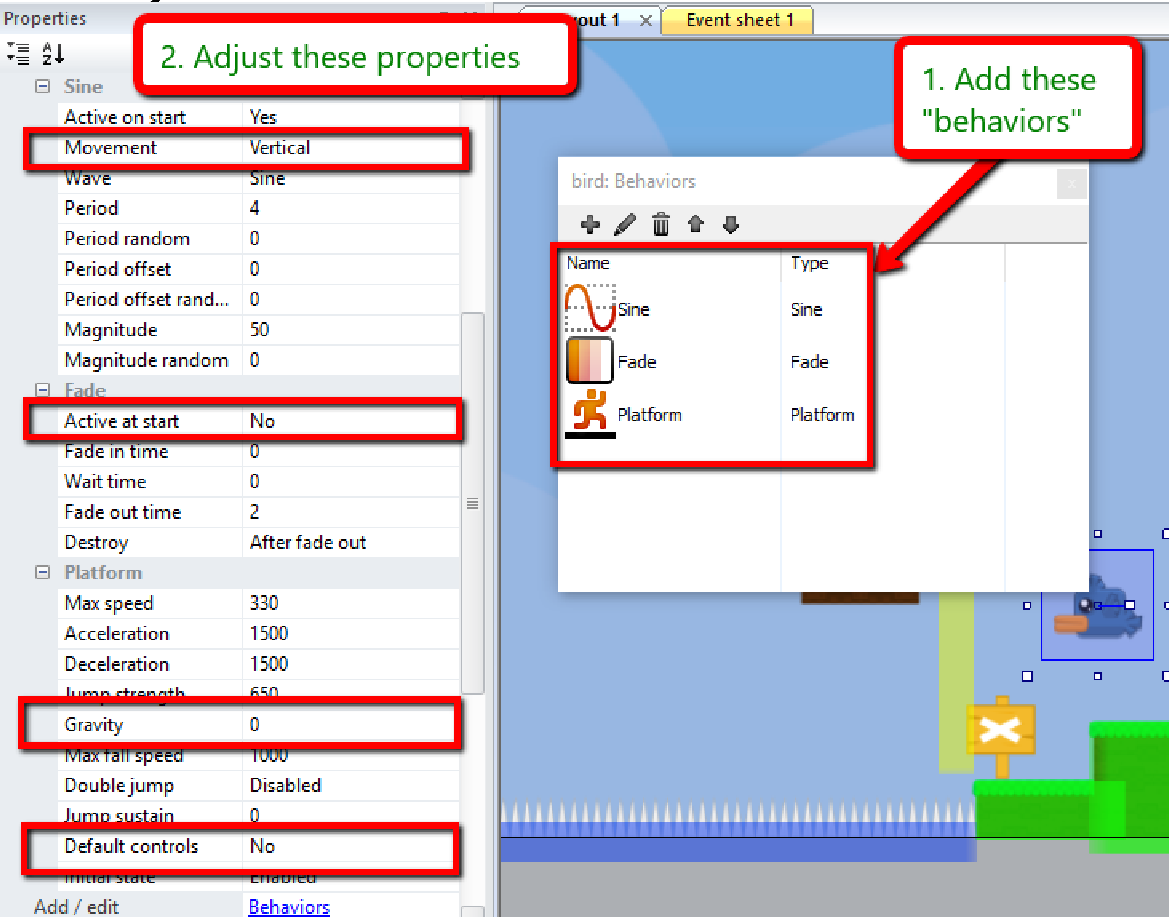
2. Right-click and select "Guess polygon shape"

3. Right-click and select "Apply to all animations"

Adding the Bird enemy

- Rename to **bird**
- Behaviors: **Sine**, **Fade**, and **Platform**

- Set up birds throughout game



2. Adjust these properties

1. Add these "behaviors"

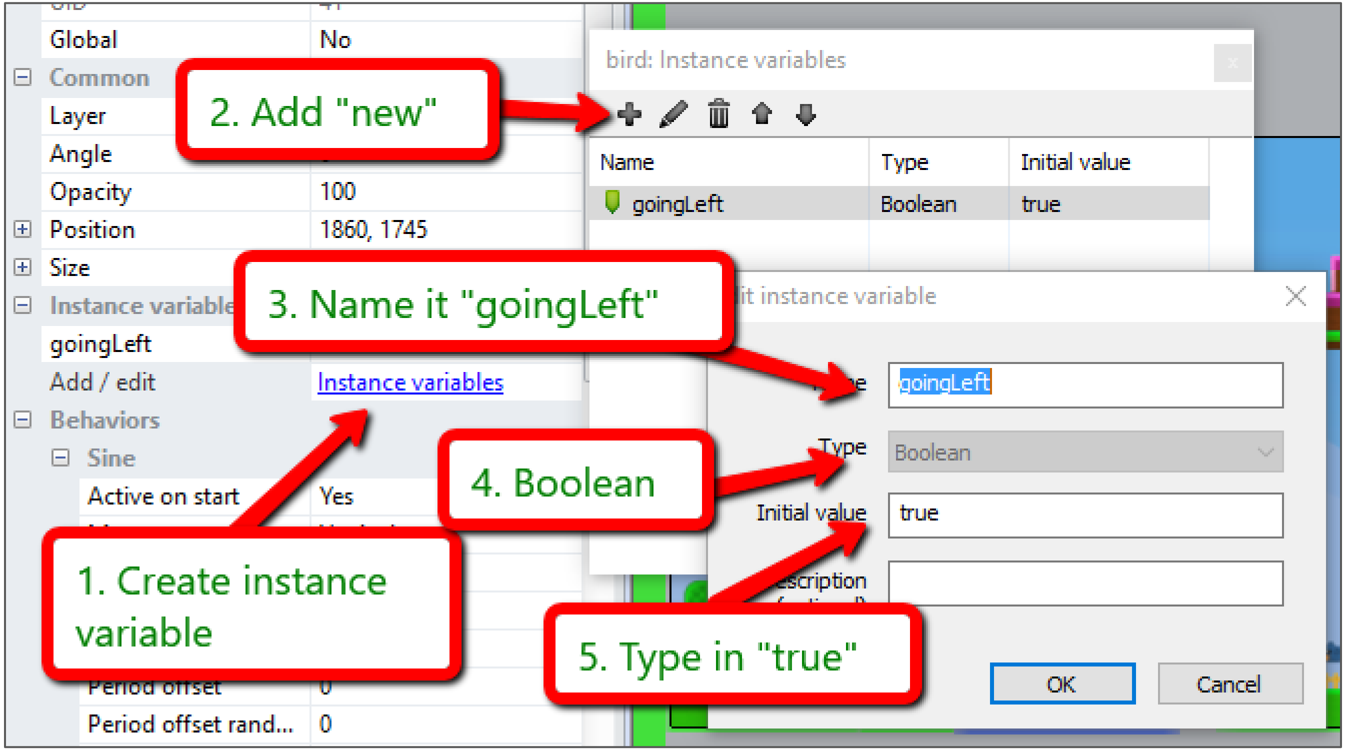
Properties	
Sine	
Active on start	Yes
Movement	Vertical
Wave	Sine
Period	4
Period random	0
Period offset	0
Period offset rand...	0
Magnitude	50
Magnitude random	0
Fade	
Active at start	No
Fade in time	0
Wait time	0
Fade out time	2
Destroy	After fade out
Platform	
Max speed	330
Acceleration	1500
Deceleration	1500
Jump strength	650
Gravity	0
Max fall speed	1000
Double jump	Disabled
Jump sustain	0
Default controls	No
Initial state	Enabled
Add / edit	Behaviors

bird: Behaviors

Name	Type
Sine	Sine
Fade	Fade
Platform	Platform

Adding the Bird enemy

- Define a boolean variable to keep track of direction



Global	No
Common	
Layer	
Angle	
Opacity	100
Position	1860, 1745
Size	
Instance variable	
goingLeft	
Add / edit	Instance variables
Behaviors	
Sine	
Active on start	Yes
Period offset	0
Period offset rand...	0

bird: Instance variables

Name	Type	Initial value
goingLeft	Boolean	true

it instance variable

Type: Boolean

Initial value: true

escription

1. Create instance variable

2. Add "new"

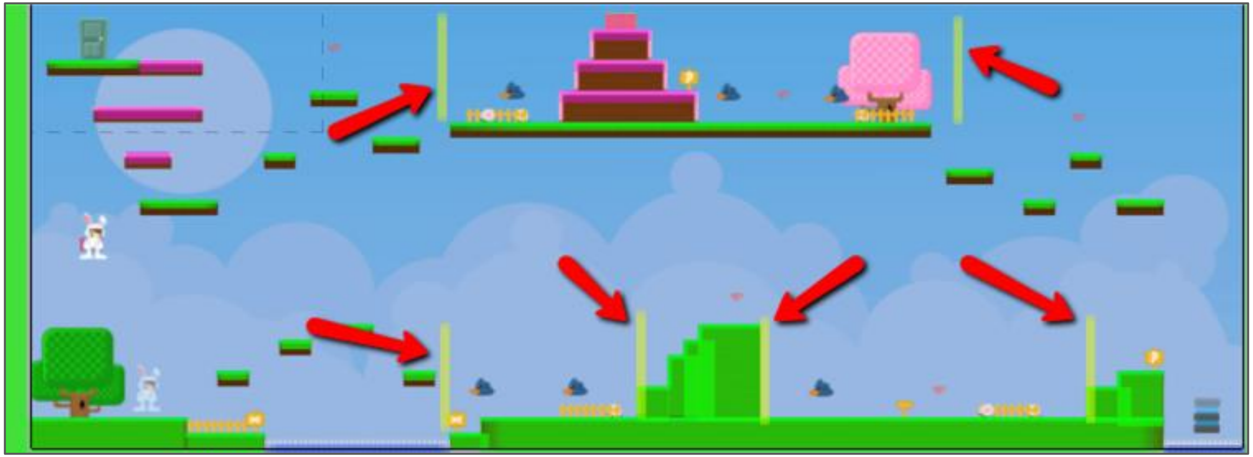
3. Name it "goingLeft"

4. Boolean

5. Type in "true"

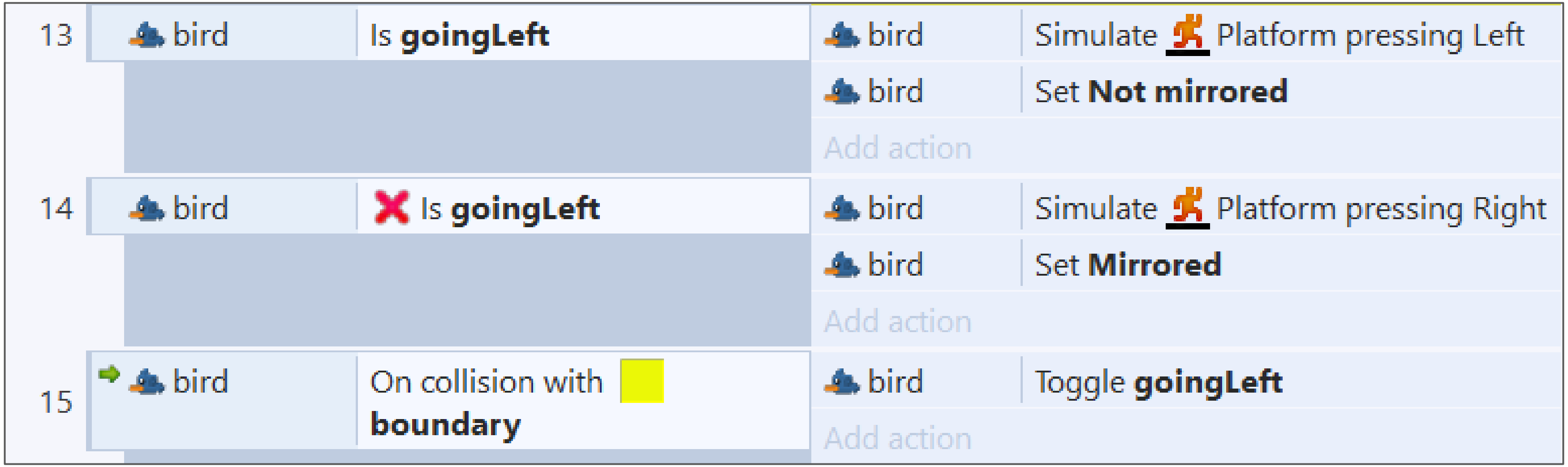
Adding the Bird enemy

- Define enemy boundaries
- Create a new ***sprite***
  - ○ Give it a solid color (yellow)
  - ○ ***Name*** it **<u>boundary</u>**
  - ○ Set ***initial visibility*** to **<u>Invisible</u>**
- Set up where there the enemies need to turn around



Adding the Bird enemy

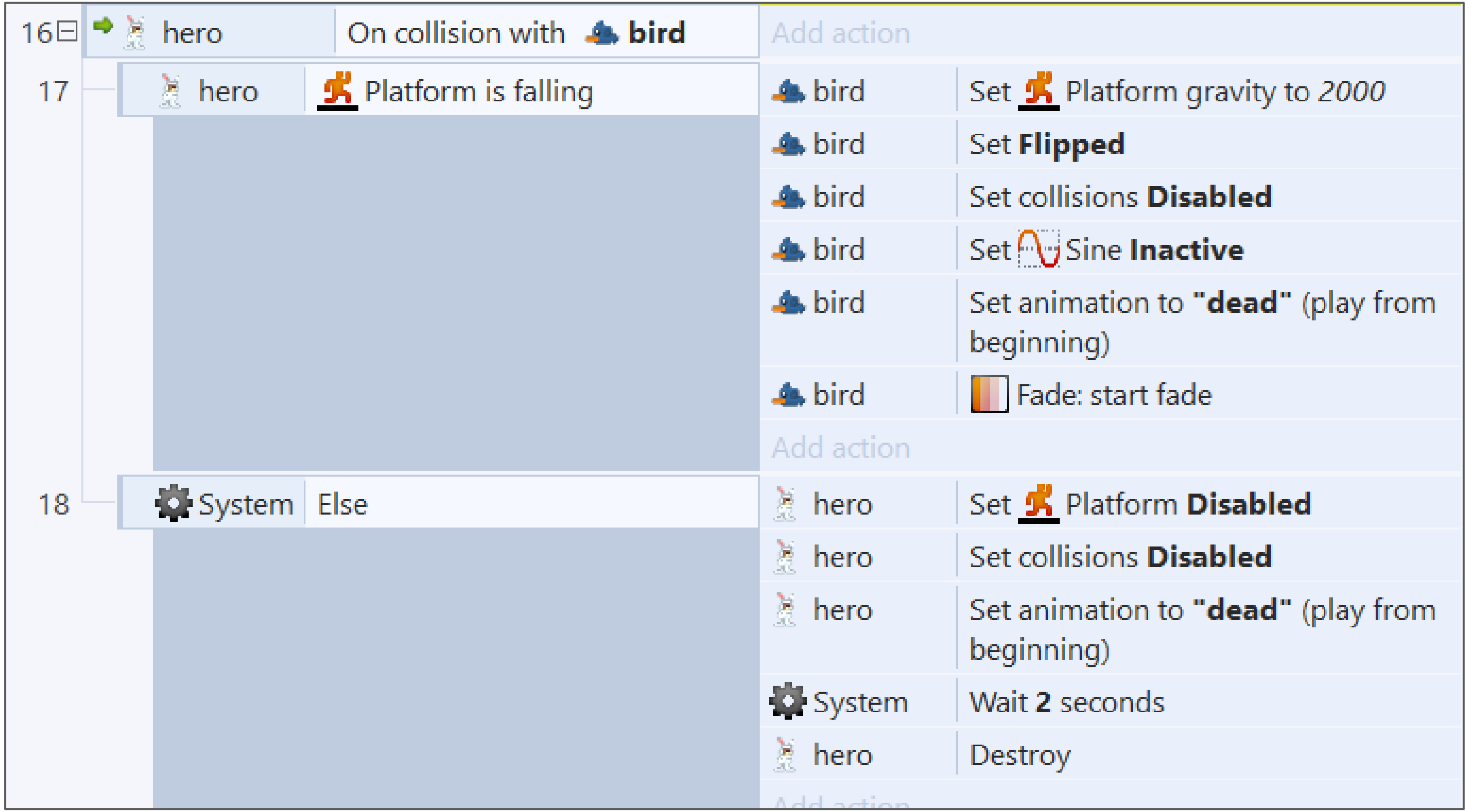
- Add these events



13	bird	Is **goingLeft**	bird	Simulate Platform pressing Left
			bird	Set **Not mirrored**
			Add action	
14	bird	❌ Is **goingLeft**	bird	Simulate Platform pressing Right
			bird	Set **Mirrored**
			Add action	
15	bird	On collision with 🟨 **boundary**	bird	Toggle **goingLeft**
			Add action	

Killing the birds

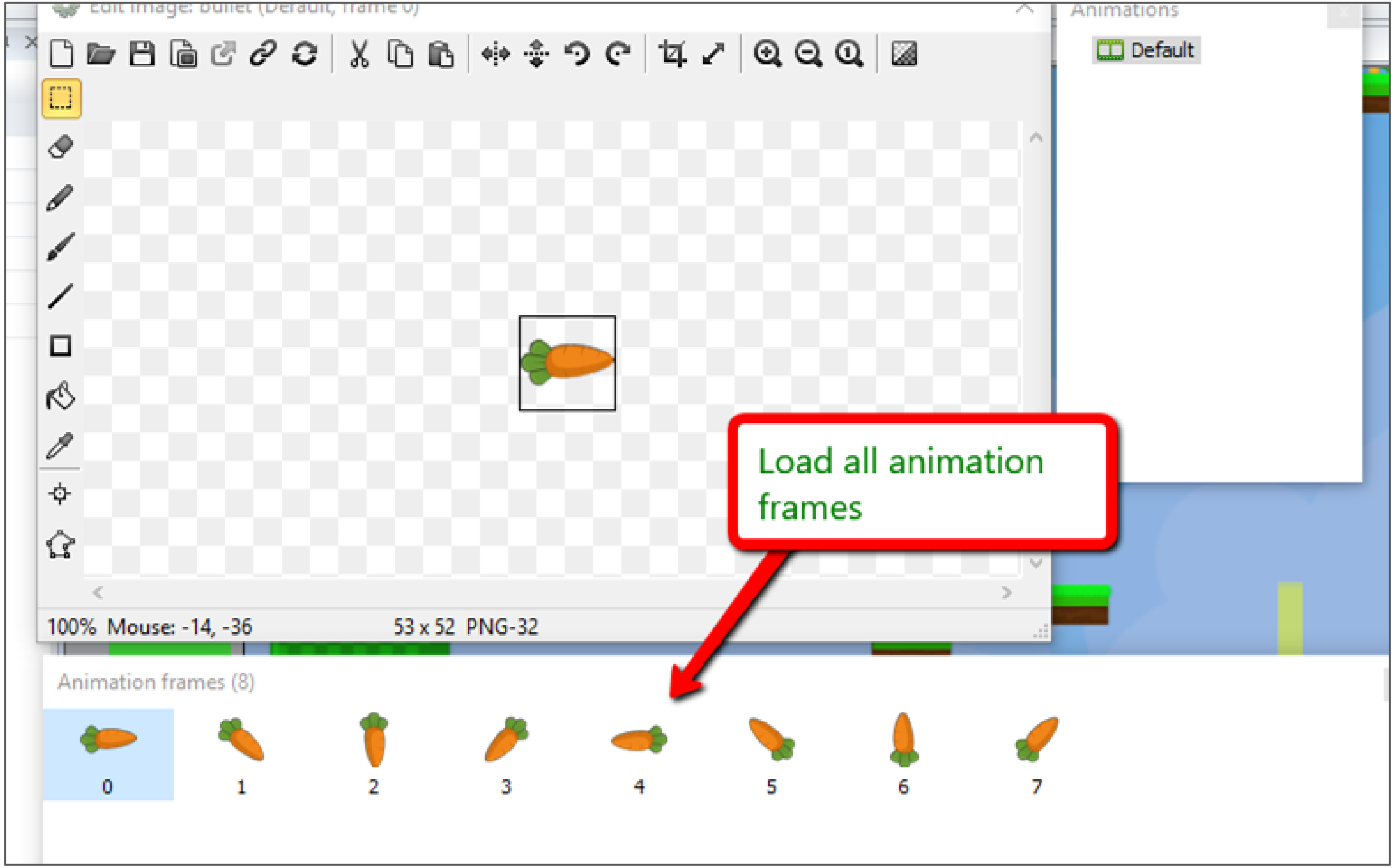
- Add these events



16	hero	On collision with **bird**		Add action
17	hero	Platform is falling	bird	Set Platform gravity to *2000*
			bird	Set **Flipped**
			bird	Set collisions **Disabled**
			bird	Set Sine **Inactive**
			bird	Set animation to **"dead"** (play from beginning)
			bird	Fade: start fade
				Add action
18	System	Else	hero	Set Platform **Disabled**
			hero	Set collisions **Disabled**
			hero	Set animation to **"dead"** (play from beginning)
			System	Wait **2** seconds
			hero	Destroy
				Add action

Hero shoots carrots!

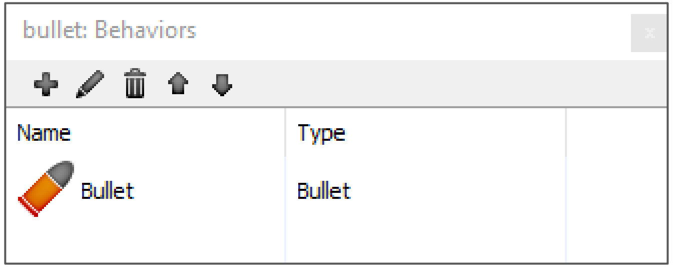
Gaming Bootcamp of South Dakota



Load all animation frames

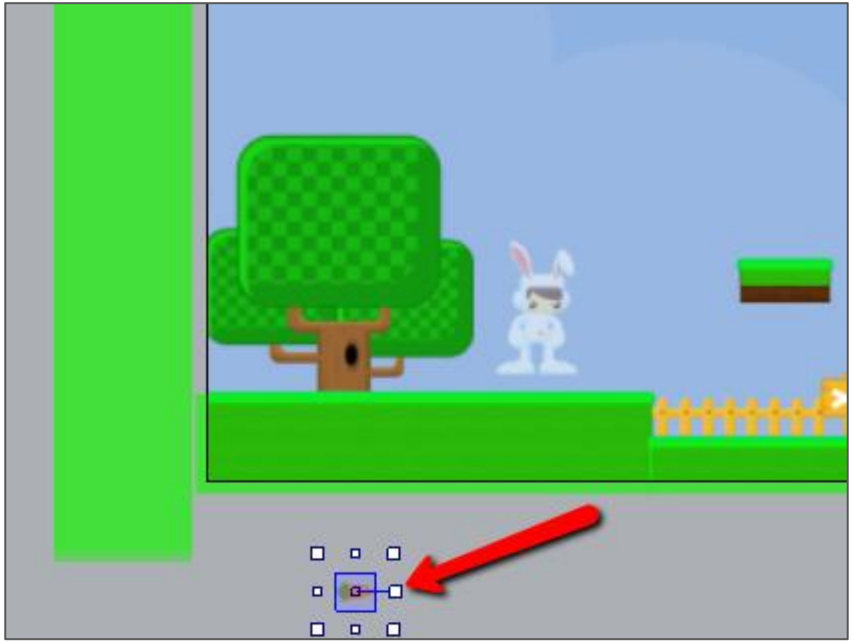
Hero shoots carrots!

- Locate OFF the layout
- Name **<u>bullet</u>**
- Add ***behavior*** **<u>bullet</u>**



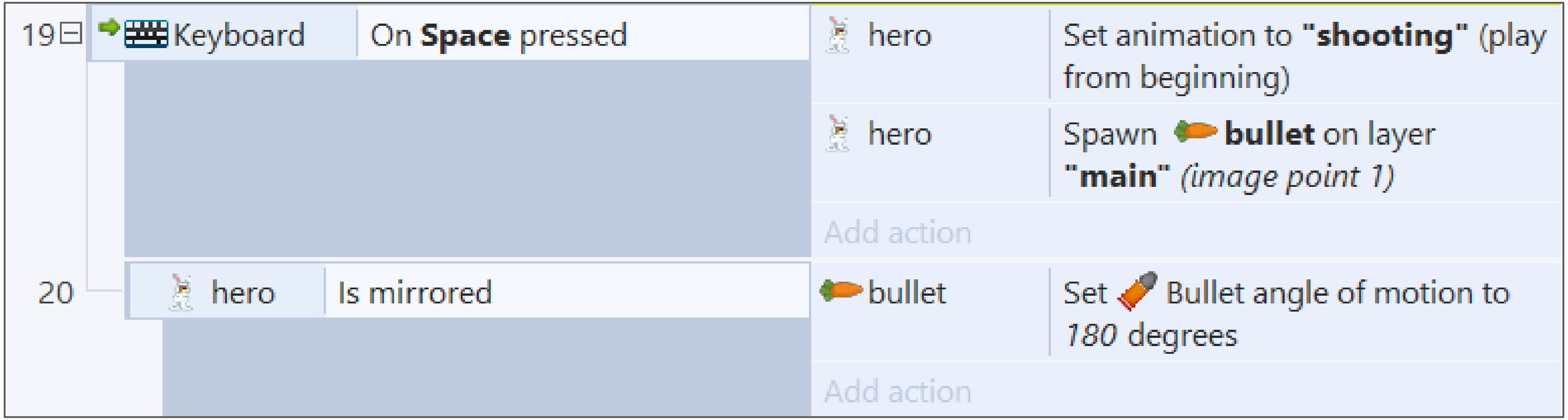
bullet: Behaviors

Name	Type
Bullet	Bullet



Hero shoots carrots!

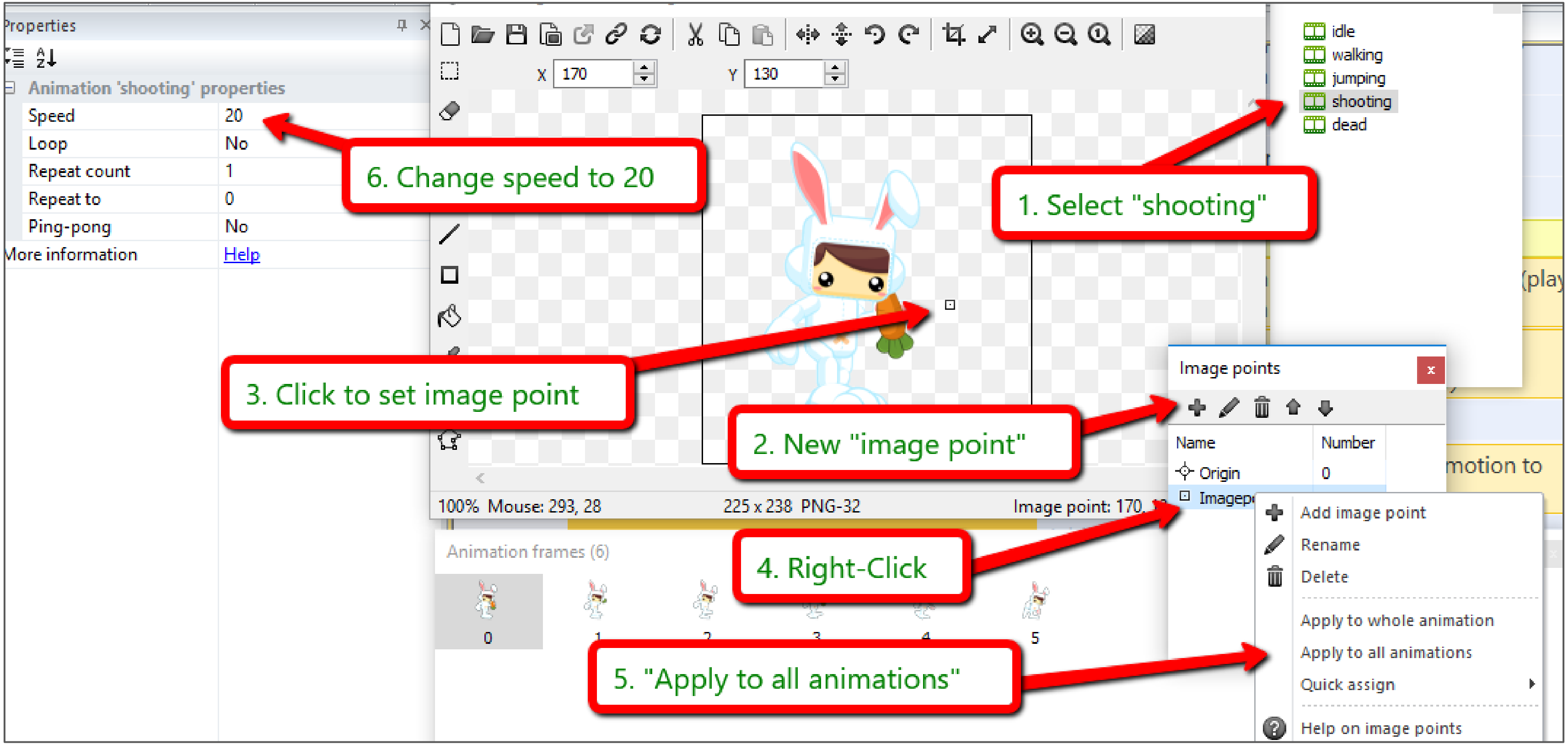
- Add events to shoot



19	Keyboard	On **Space** pressed	hero	Set animation to **"shooting"** (play from beginning)
			hero	Spawn **bullet** on layer **"main"** *(image point 1)*
			Add action	
20	hero	Is mirrored	bullet	Set Bullet angle of motion to *180* degrees
			Add action	

Hero shoots carrots!

- Adjust Hero’s image point & animation speed



1. Select "shooting"
2. New "image point"
3. Click to set image point
4. Right-Click
5. "Apply to all animations"
6. Change speed to 20

Properties

Animation 'shooting' properties

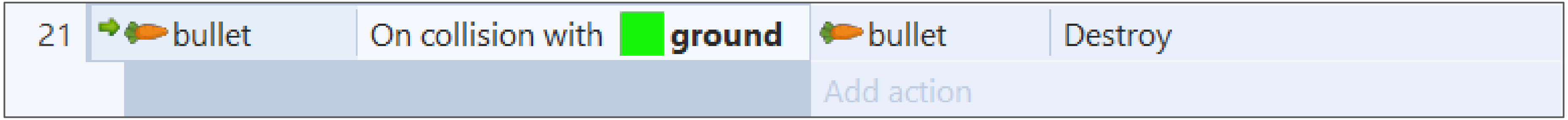
Speed	20
Loop	No
Repeat count	1
Repeat to	0
Ping-pong	No
More information	Help

X 170 Y 130

100% Mouse: 293, 28 225 x 238 PNG-32 Image point: 170,

Hero shoots carrots!

- Destroy carrots if they hit an obstacle

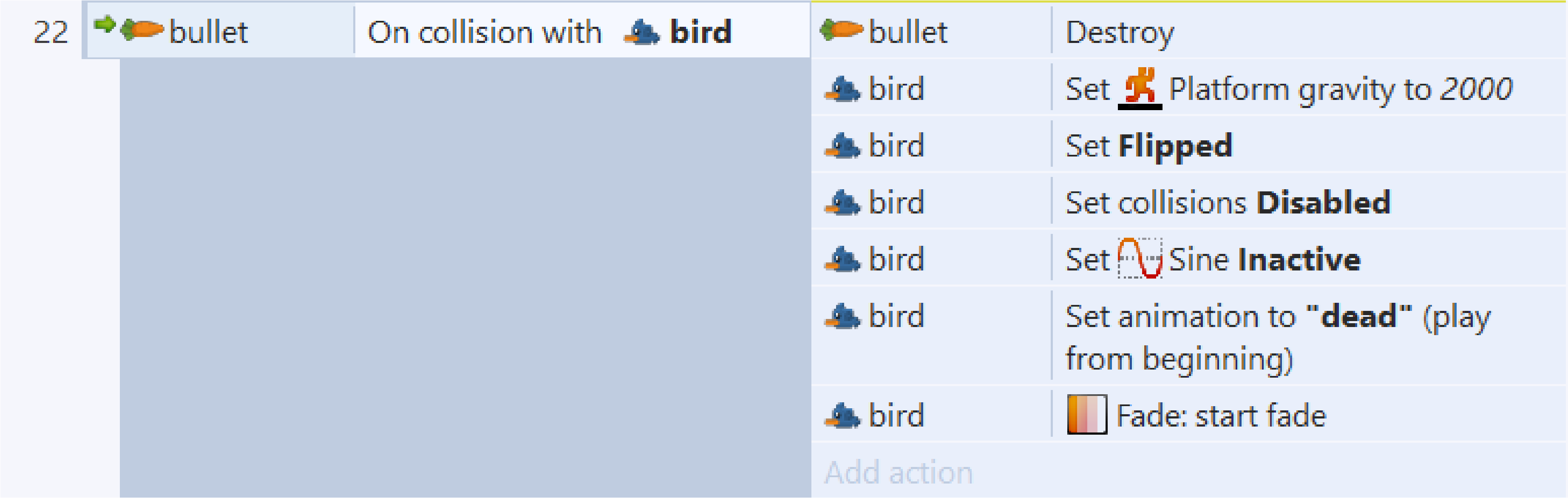


21 bullet | On collision with 🟩 **ground** | bullet | Destroy

Add action

Shoot birds

- Kill the bird if it gets hit by a carrot

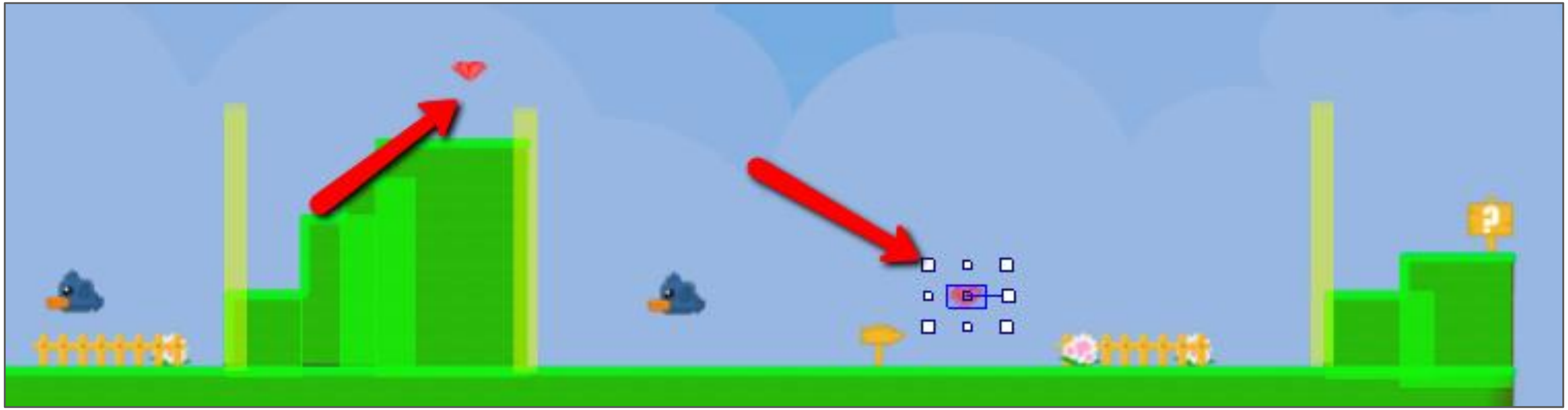


22 bullet | On collision with **bird**

bullet	Destroy
bird	Set Platform gravity to *2000*
bird	Set **Flipped**
bird	Set collisions **Disabled**
bird	Set Sine **Inactive**
bird	Set animation to "**dead**" (play from beginning)
bird	Fade: start fade

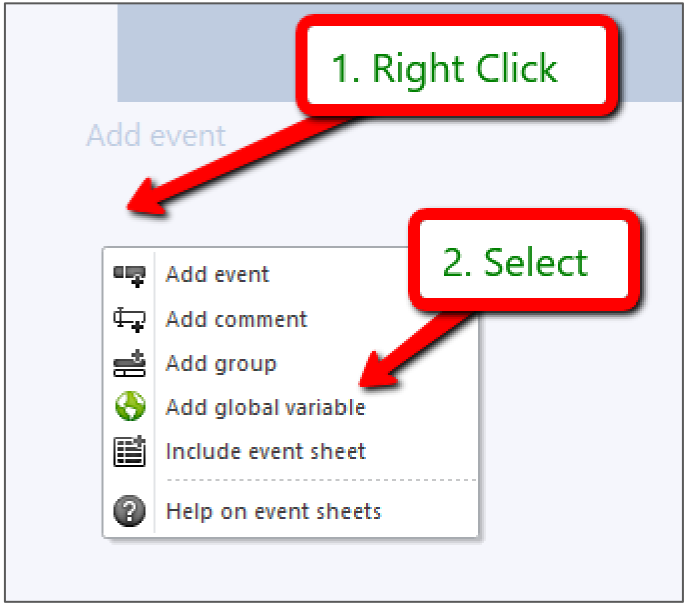
Collecting Gems (gives you carrots)

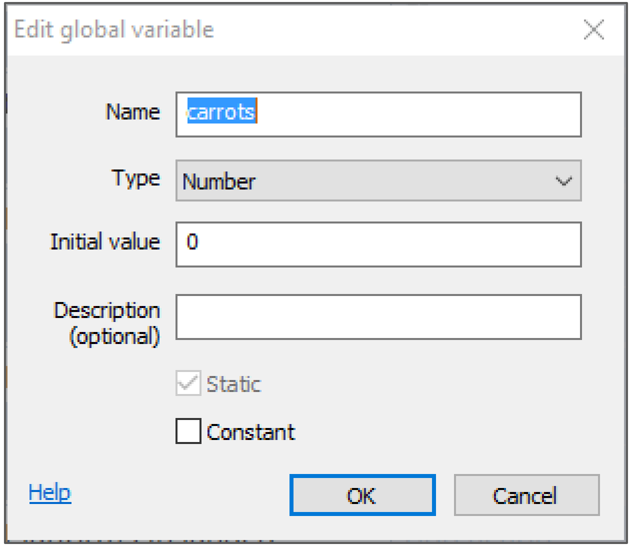
- Create a new ***sprite***
  - Load the image “gem.png”
  - ***Name*** it **gem**
- Place gems throughout the layout



Tracking Carrots

- Add a global variable
- Name it **carrots**
  - Type is a **number**
  - Initial value is **0**




Edit global variable

Name: carrots

Type: Number

Initial value: 0

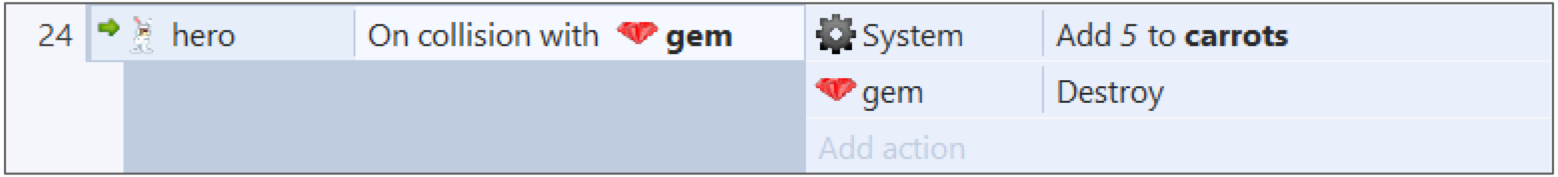
Description (optional):

☑ Static

□ Constant

Collect gems

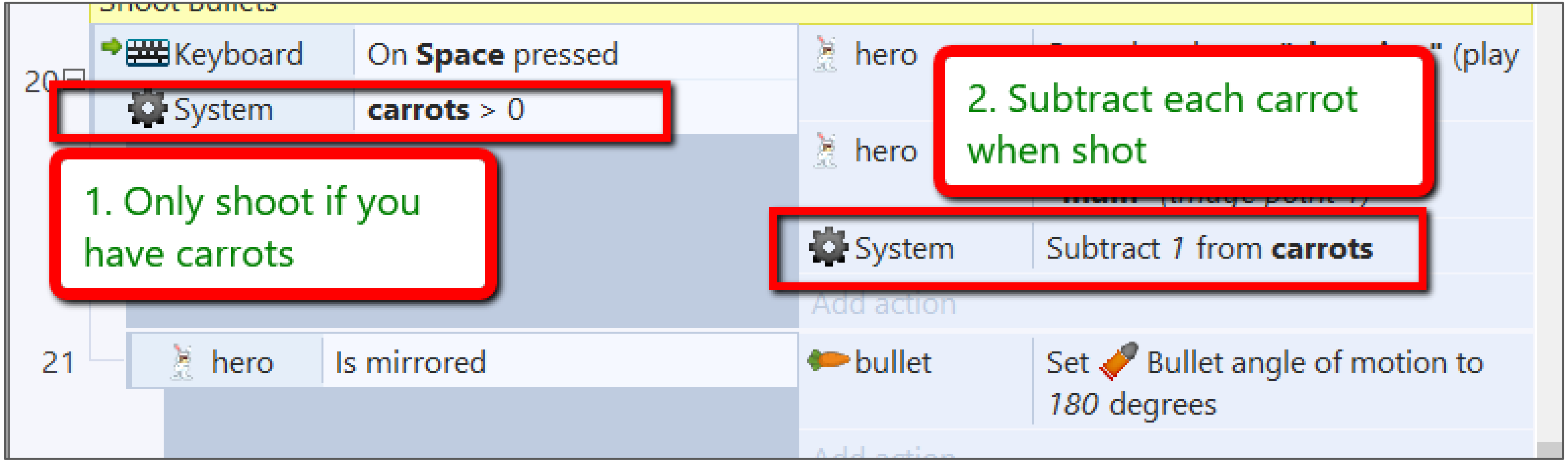
- Add event



24	hero	On collision with gem	System	Add 5 to **carrots**
			gem	Destroy
			Add action	

Shooting carrots

- Adjust thee “shoot’ event



Shoot Bullets

20 Keyboard | On **Space** pressed
System | **carrots** > 0

hero | " (play
hero |
System | Subtract *1* from **carrots**
Add action

21 hero | Is mirrored

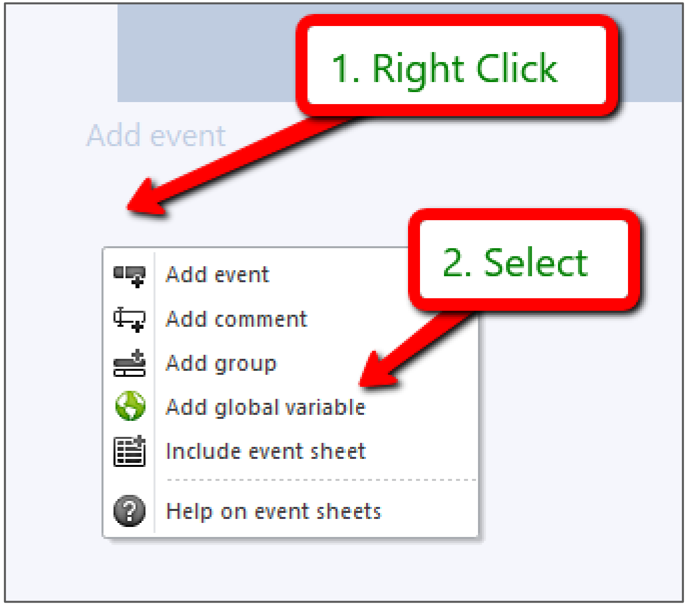
bullet | Set Bullet angle of motion to *180* degrees
Add action

1. Only shoot if you have carrots

2. Subtract each carrot when shot

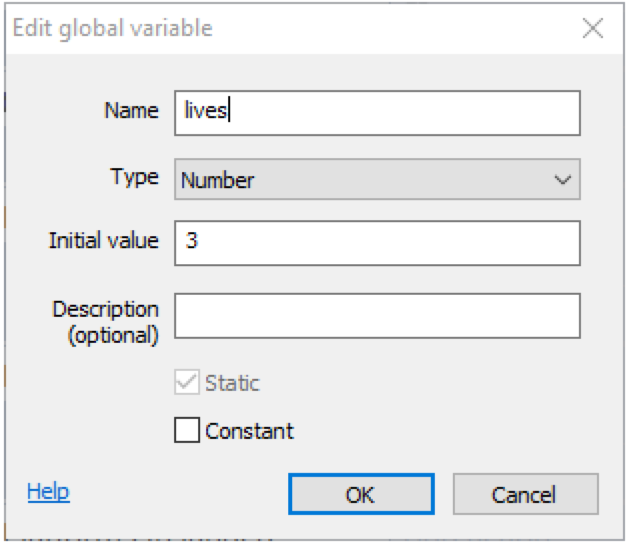
Tracking Lives

- Add a global variable
- Name it **lives**
  - Type is a **number**
  - Initial value is **3** (starting count)



1. Right Click

2. Select



Edit global variable

Name: lives

Type: Number

Initial value: 3

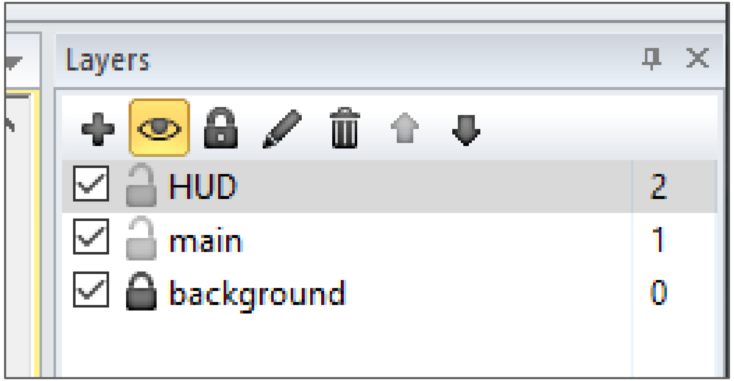
Description (optional):

☑ Static

☐ Constant

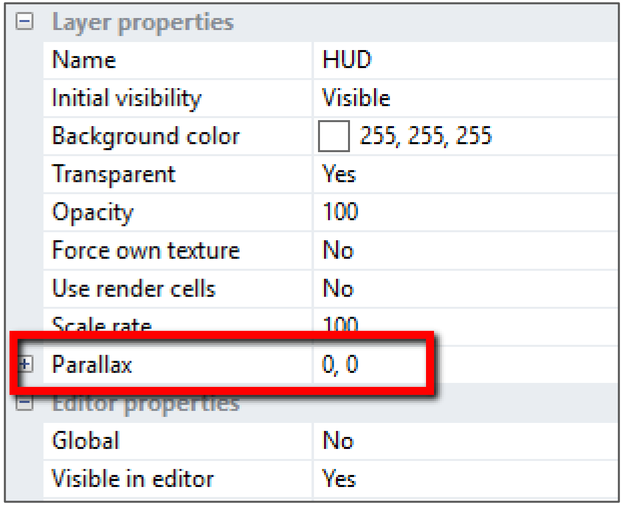
Creating Heads Up Display (HUD)

- Create another layer named HUD
- MUST appear as shown
- Set HUD's ***Parallax*** to **0,0**



Layers

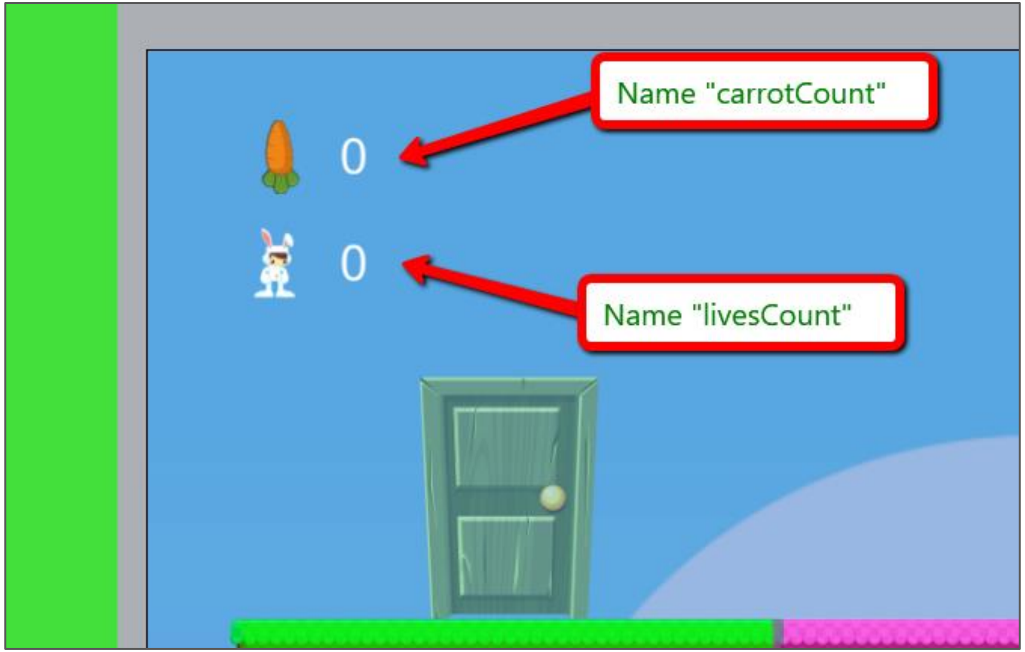
☑	🔓	HUD	2
☑	🔓	main	1
☑	🔒	background	0



Layer properties	
Name	HUD
Initial visibility	Visible
Background color	□ 255, 255, 255
Transparent	Yes
Opacity	100
Force own texture	No
Use render cells	No
Scale rate	100
Parallax	0, 0
Editor properties	
Global	No
Visible in editor	Yes

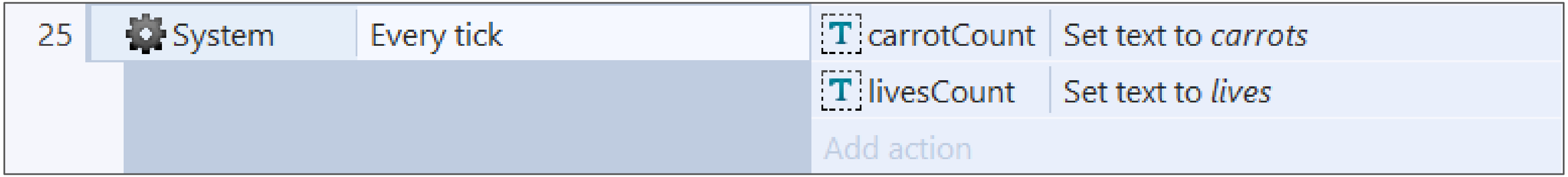
Creating Heads Up Display (HUD)

- Add icons (sprites) and labels (text)



Creating Heads Up Display (HUD)

- Add events to update our HUD



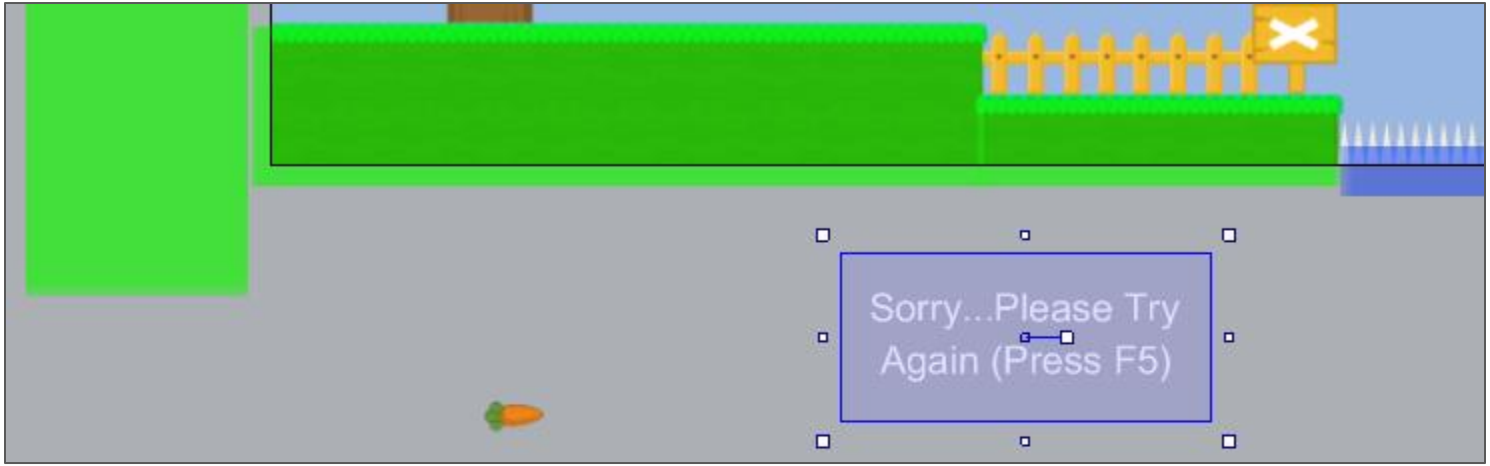
25 System | Every tick

carrotCount | Set text to *carrots*

livesCount | Set text to *lives*

“You Lose” message

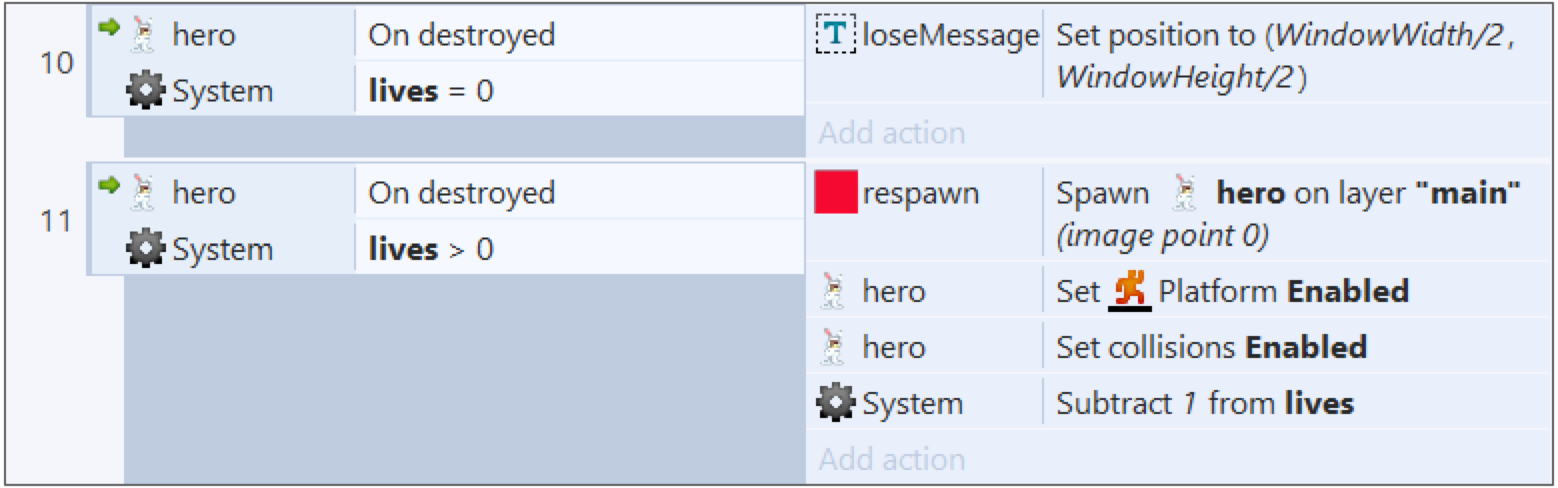
- While on “HUD” layer (you should still be!)
- Add a text that says you lose and place OFF the screen
- Name it **loseMessage**



Sorry...Please Try Again (Press F5)

Tracking our Hero’s Lives

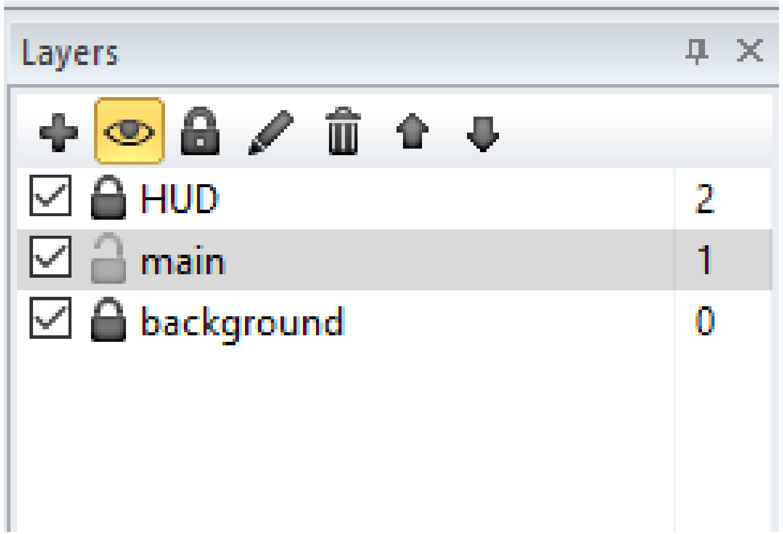
- Add / Adjust these events



10	hero	On destroyed	loseMessage	Set position to (*WindowWidth/2*, *WindowHeight/2*)
	System	**lives** = 0	Add action	
11	hero	On destroyed	respawn	Spawn hero on layer **"main"** *(image point 0)*
	System	**lives** > 0	hero	Set Platform **Enabled**
			hero	Set collisions **Enabled**
			System	Subtract *1* from **lives**
			Add action	

Lock the “HUD” display

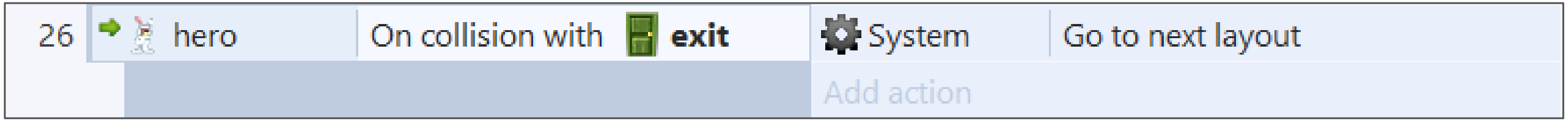
- Lock the “***HUD***” display and select the “***main***” layer as the default



☑	HUD	2
☑	main	1
☑	background	0

Adding an Exit!

- This is the LAST step for Level 1
- Create a new ***sprite***
  - Load the image "**door_01.png**"
  - Name it "**exit**"
- Add event



26 hero | On collision with exit | System | Go to next layout

Add action

Next Part

- Add level 2
- More enemies
- More challenges
- More items to collect