

## Creating a maze game

Part 1 – The basics

https://editor.construct.net/

Creating a Maze game

### Setting up the project

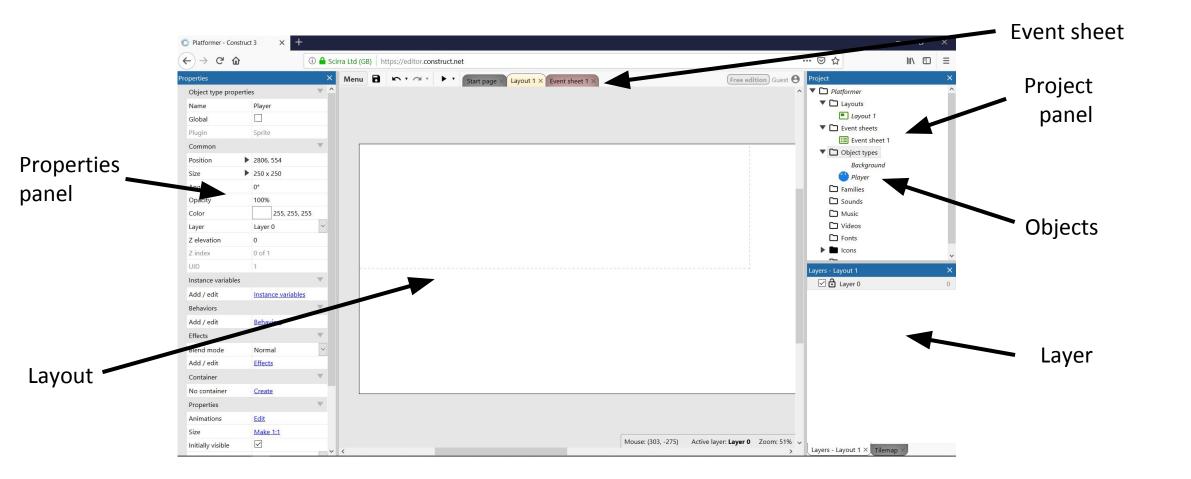
	e game		
Choose SD I	andscape 16:	9	٠
Viewport size 854	2	480	16:9
Orientations Land	lscape		۲
	Optimize for p	ixel art	

- Create a brand new project with a width of 854 and height of 480.
- (this will be how much of the screen your player will see. Your level will be twice the size)
- Name your Project

	Save Project	×
	Service Google Drive	✓ X
Search		
Name	Date Modified	Size

- Click on the Save icon at the top of screen.
- Change service to Google Drive and sign into your Google account
- Name the file and click save

### **Basics on Construct 3**



Creating a Maze game

### Creating a Sprite

0	View		•				
	- 11.			Create new obj	ect type		
	Edit eve	ent sheet		oject type from	:	<b>Q</b> Sea	rch
0	Help						
		9-patch	Function	Particles	Shadow light	Sprite	
		Sprite	Text	Tiled Background	Tilemap		
		Input		background			

- Right click anywhere on the Layout (white page) and insert new object
- Scroll down and click on Sprite
- Give the Sprite a name

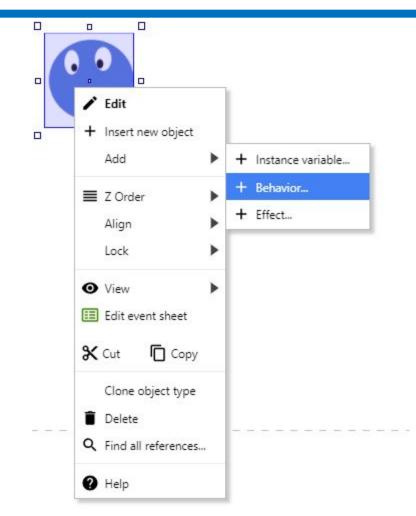
### Click insert

	Animations Editor: Player	
Color palette	┣◻▤੶◧ ▻੶~੶米茴茴 ◭੶◀੶৩੶৩੶ ኪ੶↗ ੫੫੫閠 ਖ਼	¢•⊞•
	Border Thickness I I 🕑 🗸 Center 🗸 Fill 🖉 Border 🗌 Smooth	
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	Animation 1 Frames (1)	
Red: 1		
Alpha: 255	0	
100% Pointer: -404, 95	Size: 250x250 Export Format: PNG	Start: 163, 55 - RadiusX: 8 ; RadiusY: 19

• Click anywhere on the Layout

- Draw your Player in the square of the screen (it does not have to look like mine)
- Close the window using the X in the top right hand corner

### Adding behaviors



# Right click on the sprite and click add a new behavior

Video 2

Creating a Maze game

### Moving the player

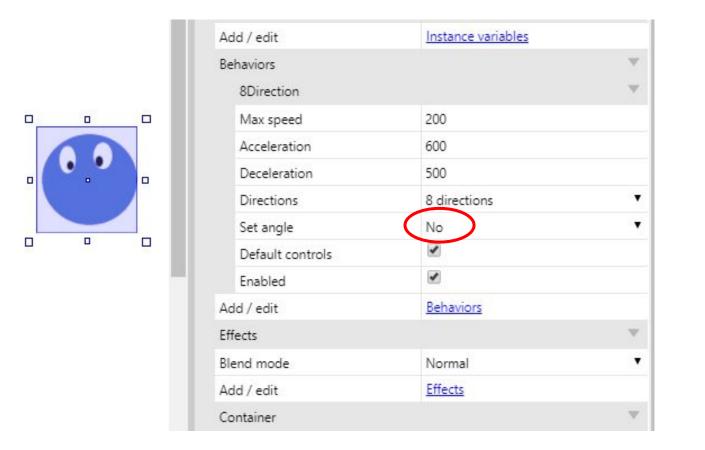
Tween	Wrap				
Movements					
111		采	1	Ű.	
8 Direction	Bullet	Car	Custom	Pathfinding	
$\bigotimes$	<u>×</u>	C	^,	41	
Physics	Platform	Rotate	Sine	Tile movement	
R					
Turret					

- Click on the 8 direction behavior and click add
- This means our player now moves and we can run and test our game using the green play button at the top of the screen

Creating a Maze game

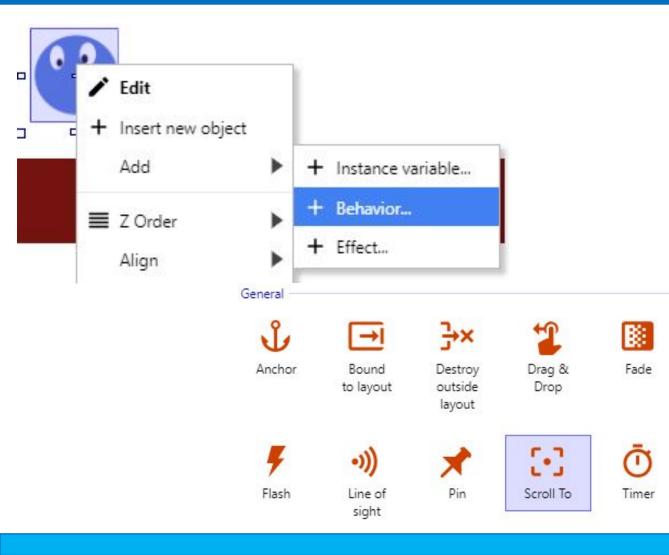


### **Movement options**



- Click on the sprite and look at the properties pane located on the right of the screen.
- This will let you further control how the player moves, including speed of the character and rotations
- Click on the set angle option and change it to "NO"

### Following the player with the camera



- Right click on the player and add a new behavior
- Click the Scroll To option

• The camera will now follow the player

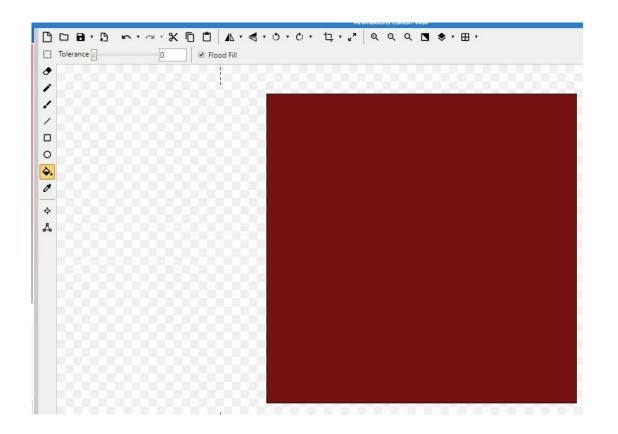
Creating a Maze game

### Creating a wall

bar	input				^
General			0		- 1
!			V	<b>(19)</b>	
9-patch	Function	Particles	Shadow light	Sprite	
SF	T				
Sprite font	Text	Tiled Background	Tilemap		
Input					•
ame Wall					

• Right click on the layout and create a new Sprite

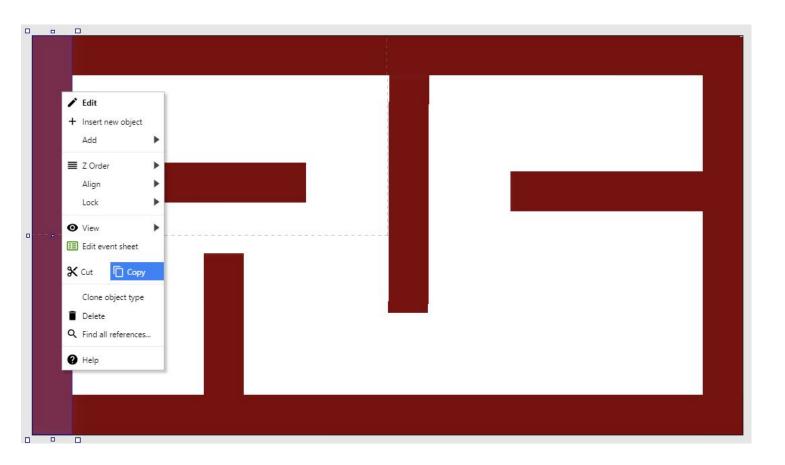
### • Remember to name the Sprite



• Use the bucket tool and fill the space in with any colour

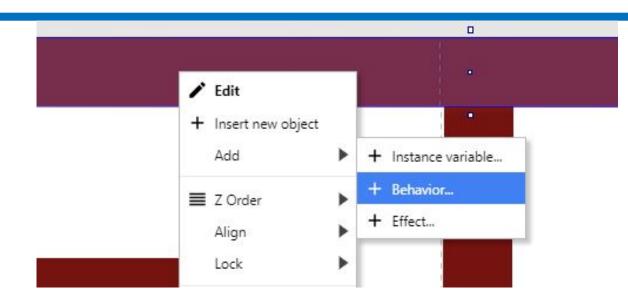
Creating a Maze game

### Creating the maze



- Copy and paste the new sprite and create a simple maze.
- You can rotate and resize the sprite to fit the need.
- Hint: Right click > view > zoom out to see the whole screen.

### Solid walls



		Add beha	vior		>
Choose a behavi	ior to add:			<b>Q</b> Search	
Attributes —				2	-
<u>_</u> .	5	$\sim$			
Jump- thru	No save	Persist	Shadow caster	Solid	

• Right click on any of the Walls and add a new behavior

- Click on the solid behavior
- This will stop are player being able to walk through walls

• Remember to save

Creating a Maze game

## Creating a maze game

Part 2 – Enemies

https://editor.construct.net/

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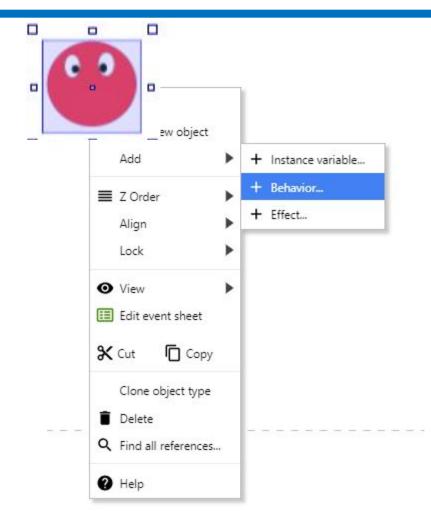
### Creating a new enemy sprite

bar	input				*
General					_
	2		0	*	- 1
9-patch	Function	Particles	Shadow light	Sprite	
SF	T				
Sprite font	Text	Tiled Background	Tilemap	-	
nput					
-	_	Ō	<u> </u>		
me bad guy	ect that is the b		5/6	8 - C	

- Right click on the layout and create a new sprite
- Remember to name it
- Next draw your enemy (he does not have to look like mine)

Video 4

### Adding behaviors



# Right click on the sprite and click add a new behavior

#### Video 4

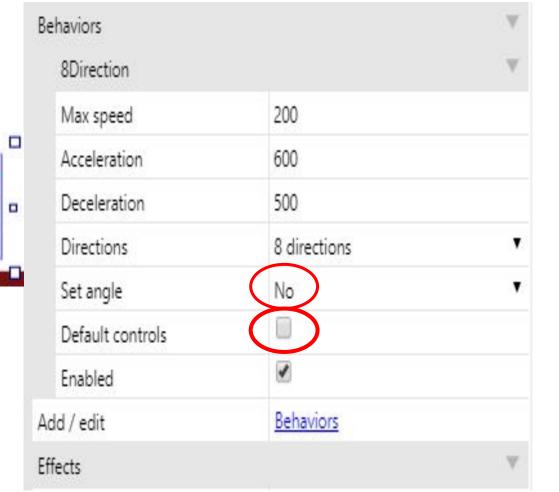
Creating a Maze game

### Setting up enemy movement

hoose a behavi	or to add:			<b>Q</b> Sea	arch
Tween	Wrap				
Movements					
		沃	2	្រ្	
8 Direction	Bullet	Car	Custom	Pathfinding	
$\bigotimes$	×	C	Λ.	41	
Physics	Platform	Rotate	Sine	Tile movement	
R					
Turret Direction: Mov	es an object up,	down, left, right	and on diagon	als.	

- Click on the 8 direction behavior and click add
- This will make our enemy move like our player

### **Movement options**



- Click on the sprite and look at the properties pane located on the right of the screen.
- This will let you further control how the player moves, including speed of the character and rotations
- Click on the set angle option and change it to "NO"
- Make sure default control is NOT checked

#### **Construct 3**

	<ul> <li>Edit</li> <li>Insert new object</li> <li>Add</li> </ul>	▶ +	Instance variable		
	Z Order Align Lock		Behavior Effect		
	• View	•		Add instance variable	>
	Edit event sheet		Name Type	Turn Number	
	Clone object type		Initial value		
	Delete Find all references.		Description (optional)	Allows are enemy to turn	
	2 Help				
U			<u>Help</u>	OK Cancel	

- Right click on the sprite and add an instance variable
- Create a new variable with the name "Turn"
- We will be using this variable to allow are enemy to turn

### Event sheet

8 Menu Event sheet 1 Start page × Layout 1 Add event Effect Cause It has started raining Grab an umbrella

- Click on the vent sheet tab at the top of the screen.
- This will allow your program your game in more depth
- The event sheet work by cause and effect so if when something happens, what is the effect of t

### Creating our first event

-	create a new co	ndition from:	-	<b>Q</b> Search
System	BadGuy	Sprite	Wall	

- Click on add event
- Now we are going to decide the cause
- Click on the Bad Guy for your level



### Setting up the cause

•	ls mirrored		ls visible	
Collisi	ons			
0	Collisions enabled	۲	Is overlapping another object	
0	Is overlapping at offset	+	On collision with another object	
nstan	ce variables			
	Compare instance variable		Is boolean instance variable set	
	Pick highest/lowest			
Misc				
	<del>&lt;</del>	onsin/	arameters for BadGuy: Compare instance variable	
	Instance v	/ariabl	arameters for BadGuy: Compare instance variable le: Choose the instance variable to compare.	
	Instance v	v <b>ariabl</b> ariable	le: Choose the instance variable to compare.	
	Instance v	v <b>ariabl</b> ariable	le: Choose the instance variable to compare. Turn (number)	
	Instance v	v <b>ariabl</b> ariable parison	le: Choose the instance variable to compare. Turn (number)	

**Construct 3** 

- Click on compare instance value and then click next
- We are going to check which way the bad guy is facing and then use that information to make him move in the other direction

Creating a Maze game

### Adding an action

😬 BadGuy	Add action	×
Pick an object to c	reate a new action from:	Q Search
\$	<b>()</b>	
System	BadGuy Sprite Wall	

• Next to the event we have created, click add action

• We want to add the action to our bad guy

Video 6

### Effect 1

8Direc	tion		
	C. Sec.		
:::	Reverse	:::	Set acceleration
***	Set deceleration	***	Set enabled
***	Set ignoring input		Set max speed
	Set speed	***	Set vector X
	Set vector Y		Simulate control
	Stop		

• The first action we are going to add will move are bad guy to the left

	-	
Control	The movement control to simulate pressing.	
Control	Left	Ţ

Video 6

### Effect 2

Unload unused images		•
Save & Load		
🗘 Load	💠 Load from JSON	
Save		
Scrolling		- 1
Scroll to object	💠 Scroll to position	
Scroll to X	💠 Scroll to Y	
Time		
🔹 Restore object time scale	💠 Set minimum framerate	- 1
💠 Set object time scale	💠 Set time scale	
🔹 Signal	Ō Wait	
🗢 Wait for signal		

- For the next action we are going to create a SYSTEM action
- Add a new action for the event and click on system and then wait
- Set the wait time to 3 seconds

### Effect 3

t value: Set the value of	an instance variable.	<b>Q</b> Search
ppearance		
🔮 Set blend mode	🥮 Set color	
fx Set effect enable	d <b>fx</b> Set effect parameter	er
🔮 Set flipped	😬 Set mirrored	
🔮 Set opacity	🕘 Set visible	
nstance variables		
Add to	Set boolean	
Set value	Subtract from	
Toggle boolean		
Aisc		
🕘 Destroy	😬 Set collisions enab	led
🔮 Set from JSON	😬 Set solid collision f	filter 🗸
Cancel <u>Help</u>		Back Next

- The final action will be for the bad guy
- Click on set value and change the value to 1
- Remember to save

1	🔴 BadGuy	Turn = 0	😬 BadGuy	Simulate 👯 8Direction pressing Left
			🗘 System	Wait 3 seconds
			😬 BadGuy	Set Turn to 1
			Add action	

- You final event should look the same as the above one
- This will only move the bad guy in one direction, we need to create a new event which repeats above but for the instance value 1 and moving right
- If you stuck check the next slide

	😬 BadGuy	<b>Turn =</b> 0	🔴 BadGuy	Simulate 👯 8Direction pressing Left
			🌣 System	Wait 3 seconds
			🔴 BadGuy	Set Turn to 1
			Add action	
😬 BadGuy	Turn = 1	🔴 BadGuy	Simulate 👯 8Direction pressing Right	
			🌣 System	Wait 3 seconds
			🔴 BadGuy	Set Turn to 0
			Add action	



### Player and enemy collision

	create a new co			Q Search
System	BadGuy	Sprite	Wall	

**Construct 3** 

- For the final part of this section, we need to do something when are player touches the enemy
- Create a new event and click on the player

### Player and enemy collision



Click on the "is overlapping with another object option"

And on the next page click on the bad guy

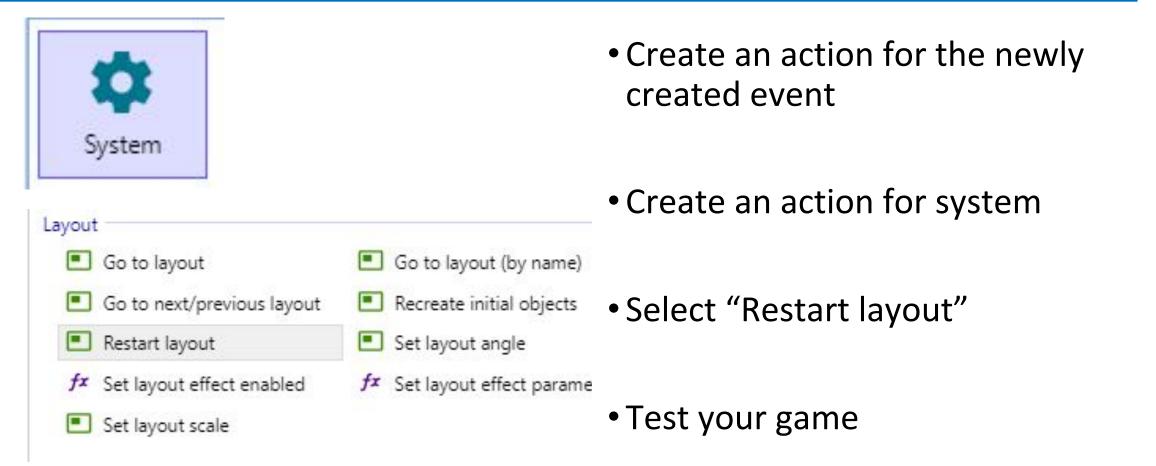
Object: Select the object to test for overlap with.

**Construct 3** 

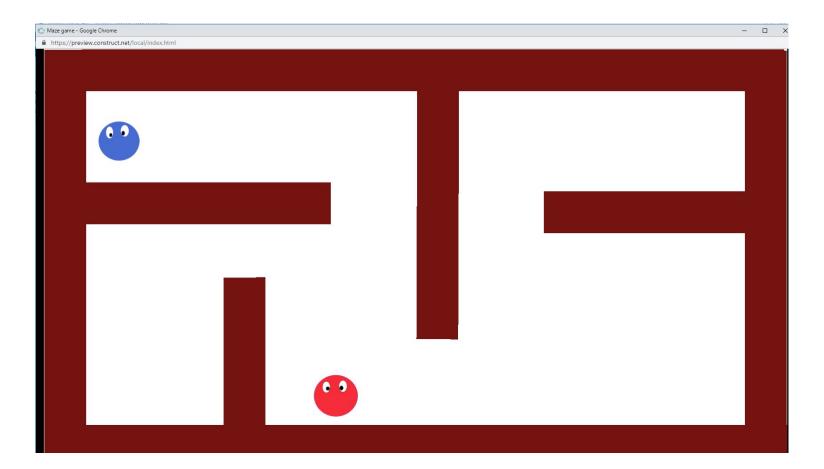




### Restarting the game



### What your game should look like



- You should have
- A player who can move
- The player can not leave the level
- A bad guy who can move left and right
- Level reset when the player touches the bad guy

Video 7

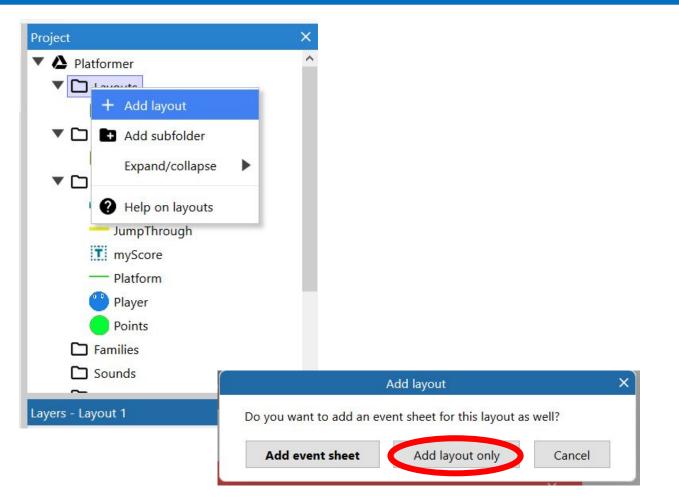
## Creating a platformer

Part 3 – A second level

https://editor.construct.net/

Creating a Maze game

### Creating a new Layout

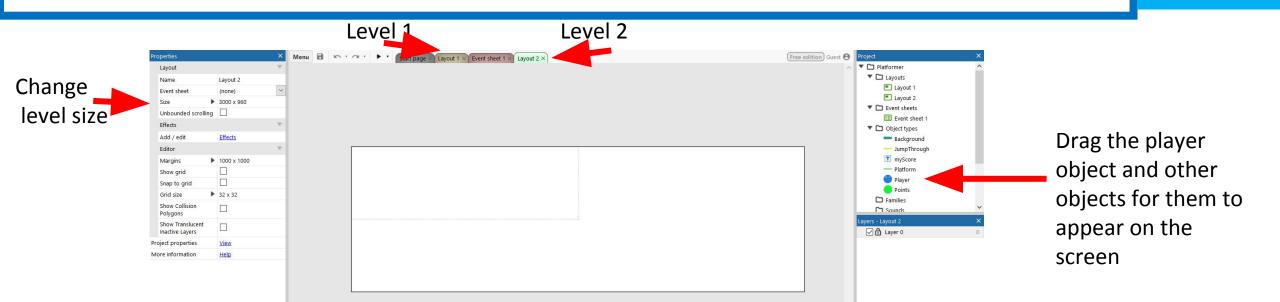


• Right click on the Layout folder (top right of the screen)

• Click add layout only

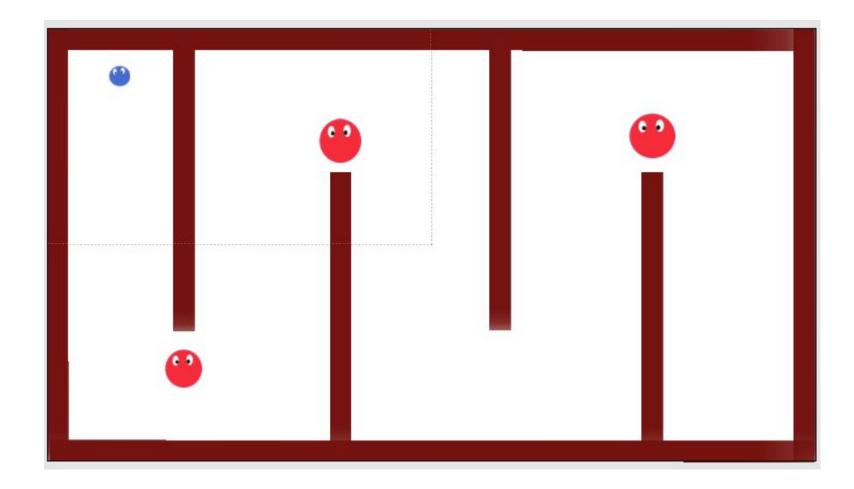


### Creating a new level



- You now have a second level but it is very empty
- You will add your Player, walls and enemies into this level
- You can also edit the size of level if you want to make it bigger and smaller

### Where you should be at



• You should have a second layout with walls, your player and enemies



Creating a Maze game

### Linking your event sheet

More information

sheet 1

sheet 1

Help

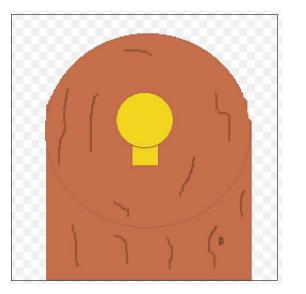
Project		
<ul> <li>Platformer</li> <li>Layouts</li> <li>Layout 1</li> <li>Layout 2</li> </ul>	Branadias	
Event sheets	Properties Layout	
Event sheet 1	Name	Layout 2
	Event sheet	Event sheet
	Size	(none)
	Unbounded scr	olling Event sheet
	Effects	
	Add / edit	Effects
	Editor	
	Margins	► 1000 x 1000
	Show grid	
	Snap to grid	
	Grid size	► 32 x 32
	Show Collision Polygons	
	Show Transluce Inactive Layers	nt 🗌
	Project properties	<u>View</u>

- If you try play your second level, you baddies will not move and the game wont reset if you touch them. This is because level 2 does not follow the rules set up in our event sheet.
- To fix this click on Layout 2 and set the event sheet to event sheet 1.
- Now level 2 will work like level 1.

### Creating the door to the next level

bar	input				^
General					
	2		Q	<b>20</b>	
9-patch	Function	Particles	Shadow light	Sprite	
SF	T				
Sprite font	Text	Tiled Background	Tilemap		
Input					
					~
Jame Next Lev	rel				
n animated ob	ject that is the b	ouilding block of r	nost projects.		
elp				Insert	Cancel

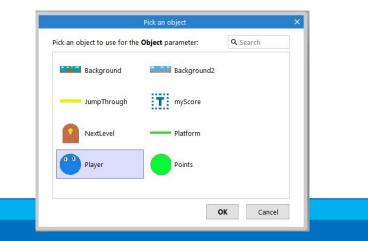
**Construct 3** 



- Go back to the first level
- Right click on the layout ad create a new object
- Create a sprite and name it NewLevel
- This will be how your player gets to the next level (I'm using a door, you can use whatever you like)
- Place your door at the end of level 1

### Next level (Event)

1	+	Player	On destroyed	🔯 System	Restart layout
				Add action	
		Points	ls overlapping 💙 Player	Points	Destroy
				Player	Add 1 to Score
				1997	
				T myScore	Set text to str(Player.Score)
А	dd ev	vent		Add action	Set text to str(Player.Score)
	dd ev ons	vent			Set text to str(Player.Score)
	ons	llisions ena	abled	Add action	ng another object



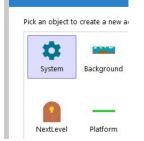
**Construct 3** 

- Go to your event sheet and click "Add Event"
- Click on Next level and scroll down till you see the "is overlapping another object" option
- Select the player as the object
- This will cause an action to happen when the player touches the door

Creating a Maze game

### Next level (action)

NextLevel	Is overlapping 🕘 Player	Add action



		Add 'System' action		
o to n	ext/previous layout: Go to th	ne next or previous layout.	<b>Q</b> Search	
▼	Set layer scale	Set layer scale rate		1
۲	Set layer transparent	Set layer visible		
۲	Set layer Z elevation			
Layout	Go to layout	Go to layout (by name)		
	Go to next/previous layout	Recreate initial objects		ł
	Restart layout	Set layout angle		
fx	Set layout effect enabled	fx Set layout effect paramete	er	
	Set layout scale			

- Add an action to the newly created event
- Click on system and scroll down to the option "Go to next/previous layout"
- On the next step, make sure next is selected and then click done.
- You now have 2 levels in your game
- Remember to save

## Creating a platformer

Bonus – Xbox Controller

https://editor.construct.net/

Creating a Maze game

Xbox buttons

• Head to computer office and ask for a controller

- Plug it in to any USB on your computer
- Check the controller turns on

Creating a Maze game

### Import the controller functions

Sprite font	Text	Tiled Background	Tilemap		^
nput			O		-
Gamepad	Keyboard	Mouse	Touch		
Media	( <b>•</b> C		<b>.</b>	•••	
Audio	Game recorder	Geolocation	Speech recognition	Speech synthesis	
me Array					

- Right click on the layout and create a new object
- Select Gamepad
- This will give us new event to select from

**Xbox** 

buttons

### Setting up our controller event

		Add cond	ition		>
ck an object to	create a new cor	ndition from:		<b>Q</b> Search	
0			8		
System	BadGuy	door	Gamepad	Sprite	
Wall					



- Head to the event sheet and create a new event
- Select gamepad
- Select "Is button down" option
- Finally we are going to leave the button as "D-Pad Up"

**Xbox** 

buttons

### Moving up with the controller

		Add condition	×
Pi	ck an object to create a new o	condition from: Q Search	
	System BadGuy	door Gamepad Sprite	
latfor	Wall		
×	Fall through	📩 Set acceleration	
×	Set angle of gravity	📩 Set ceiling collision	
×	Set deceleration	🔥 Set double-jump	
×	Set enabled	🔥 Set gravity	
×	Set ignoring input	🔥 Set jump strength	
×	Set jump sustain	📩 Set max fall speed	
×	Set max speed	🔥 Set vector X	
×	Set vector Y	📩 Simulate control	

- Add a action to the event we just created and select player
- Scroll down and select the "Simulate control" option
- Change control to jump

Control: The movement control t

• Our player will now move up when the "D-pad up" is pressed

Control Up

Creating a Maze game

**Xbox** 

buttons

### Repeat for the other directions

- Repeat for all four directions
- You will need a new event for each direction
- Remember to save

Construct 3

Xbox

buttons