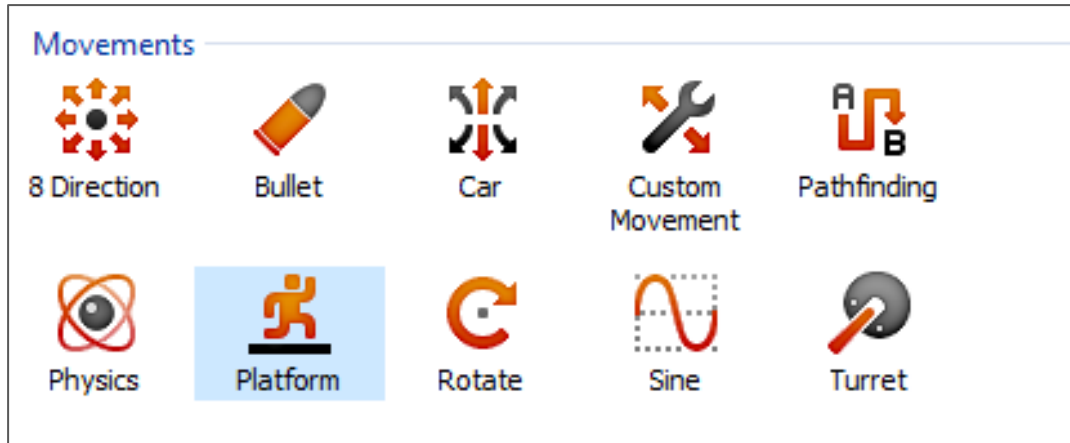# Build a Platform Game

Part 1

Play the game we are building:
click

New Behavior

- **Platform** - A sprite will run, jump and fall on any "solid" object. This is games like Super Mario Brothers and tend to have large layouts.

Today's Game

Challenge: Create your first platform game that matches the sample game played earlier.

Goal: Avoid the spikes and get to the end of the game
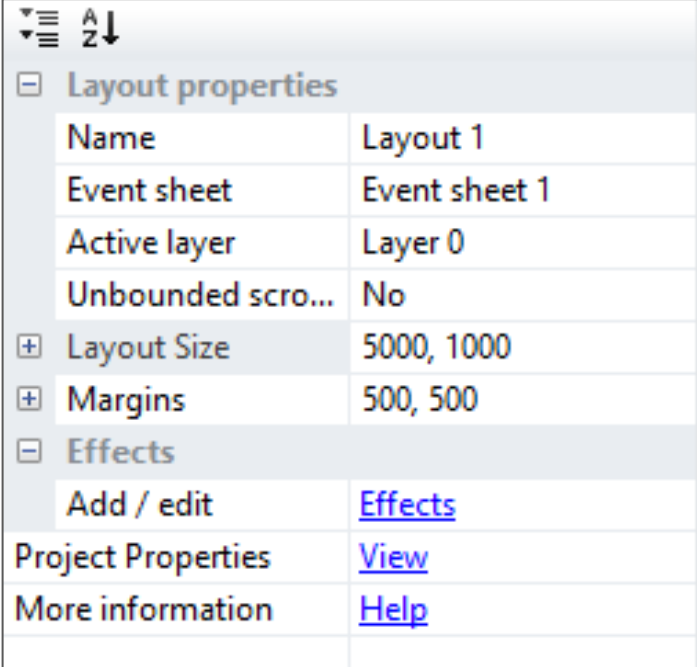
Features:

- Add **Tiled Background** for your ground, spikes & walls
- Add hero and add **Platform** behavior
- Add **Keyboard** behavior so your hero faces the right direction
- Add a **restart** if your hero dies
- Add **reward** at the end

Final Game

Try Again but AVOID the Spikes

You Win!!!
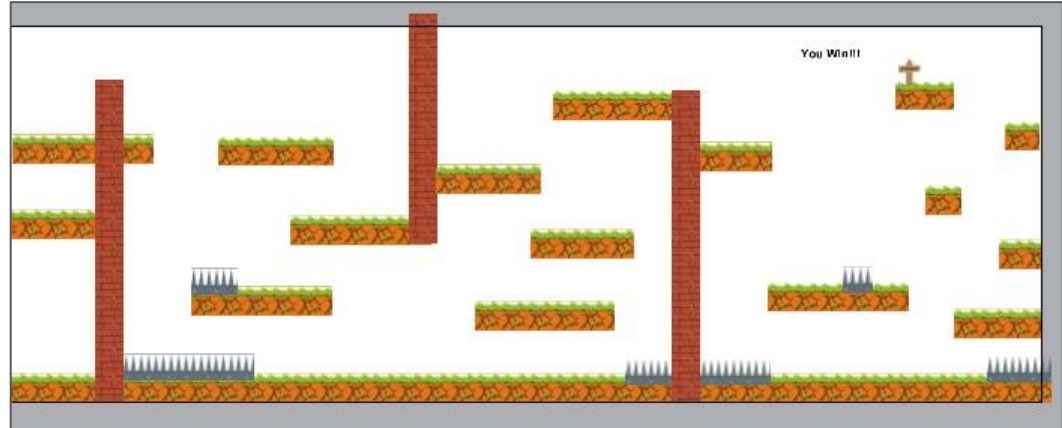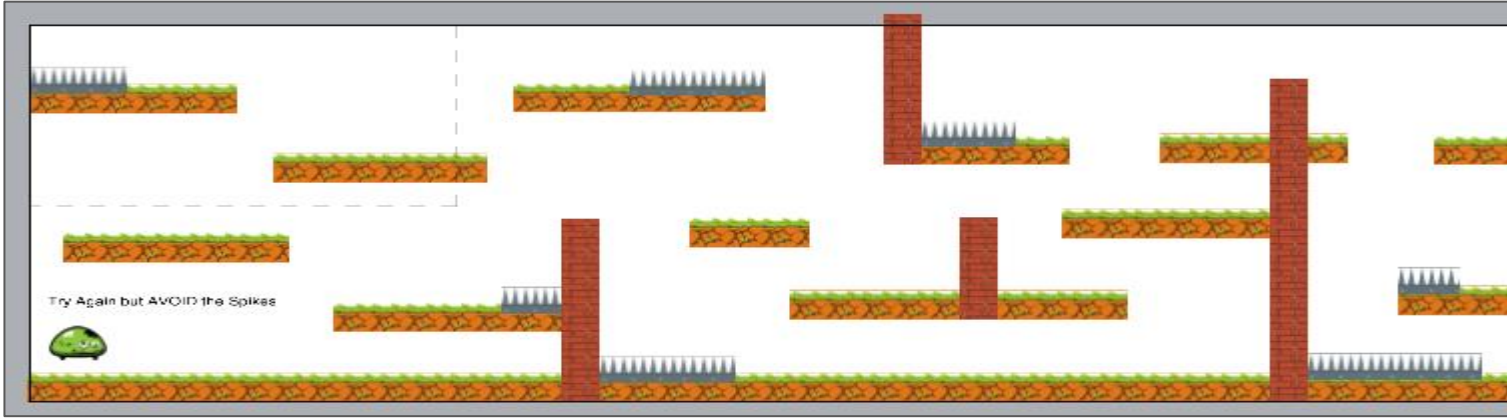
Setup Layout

- Large layout - leave the "**Window Size**" the default
  - Set Layout to "**5000, 1000**"

| Layout properties	
Name	Layout 1
Event sheet	Event sheet 1
Active layer	Layer 0
Unbounded scro...	No
Layout Size	5000, 1000
Margins	500, 500
Effects	
Add / edit	Effects
Project Properties	View
More information	Help

Create Tited Background

- **Tiled Background** is similar to a sprite but it automatically repeats
- Perfect for ground, background, and walls
- Images MUST be the right size when editing
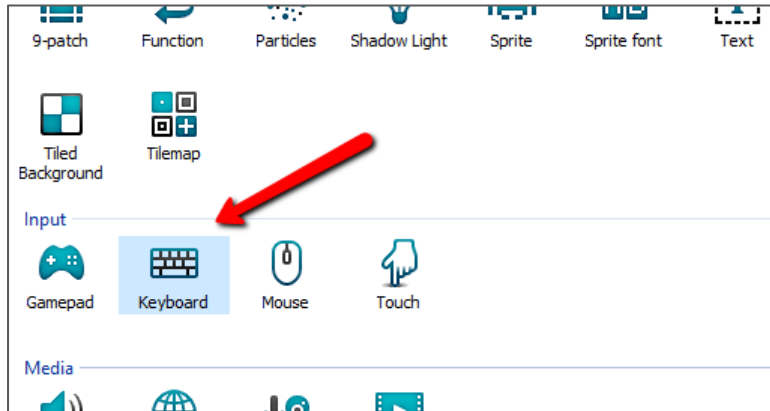- Use for our "**ground**", "**wall**", and "**spikes**"
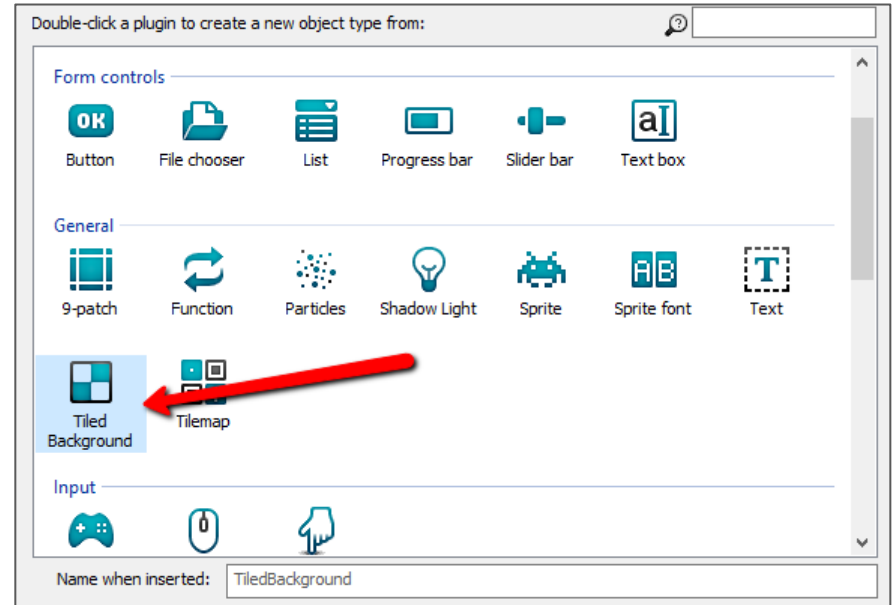
Add Hero

- Add our **hero** using the two images provided
- You MUST adjust the **collision points**, or he will not walk correctly
- ADJUST hero's "**jump strength**" to **800** or he won't make the jumps!
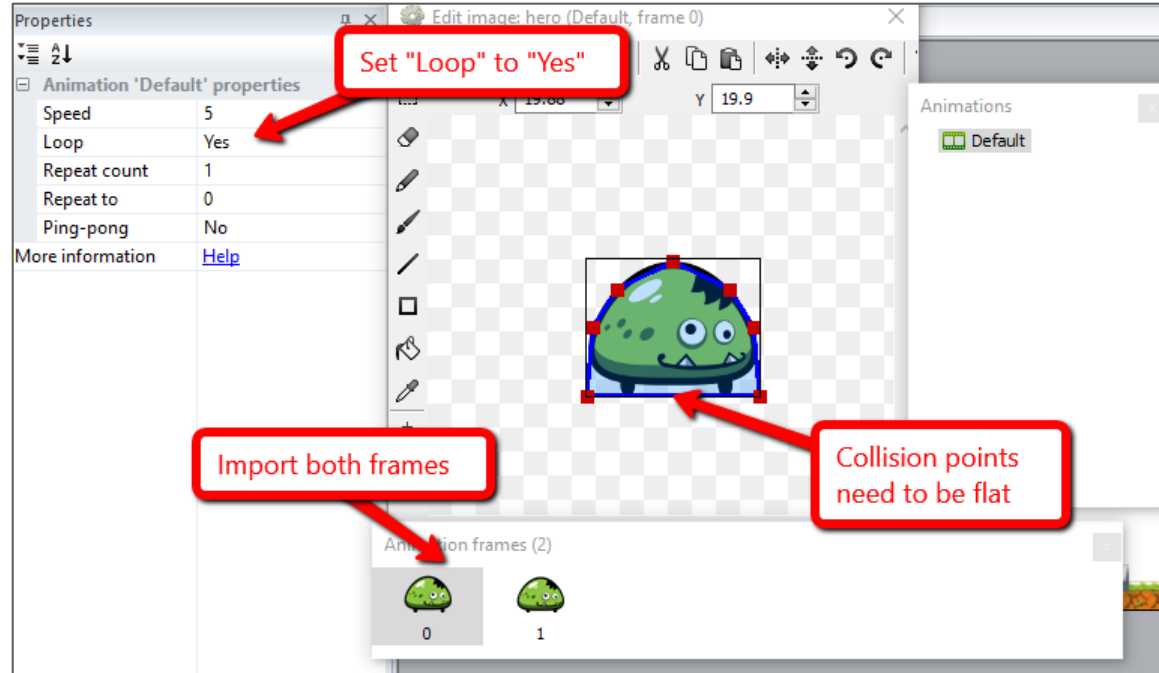
Hero Faces the Right Direction

- Add "**Keyboard**" object to the layout (does not show up on the layout)

- Set the hero's "**Mirror**" property, based on which arrow key is pressed

Add Try Again Message

- Add new **Text**, adjust text and set initial visibility to "**invisible**"
- Add "**Fade**" behavior to the **"try again"** message.
- Adjust properties:

Behaviors	
Fade	
Active at start	No
Fade in time	0
Wait time	0
Fade out time	4
Destroy	No
Add / edit	Behaviors

- Restart event

1	➡️ 🚗 hero	On collision with ▬ spikes	🚗 hero	Set position to (106, 858)
			[T] tryAgain	Set Visible
			[T] tryAgain	🟧 Fade: restart fade
			Add action	

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Add "Win" Prize & Message

- Add "**finish**" sprite, place **on** the layout
- Add a "**coin**" sprite, place **off** the layout
  - Add "**Physics**" and "**Destroy Outside of Layout**" behaviors
- Add "**Text**" for "You Win", set initial visibility to "**invisible**"
- Event when reaching the "**finish**"

2	hero	Is overlapping 🕆 **finish**	🕆 finish	Spawn 🪙 **coin** on layer **0** *(image point 0)*
			T youWin	Set Visible
			hero	Start ignoring 🏃 Platform user input
			Add action	

What is a Z Order

- All objects are layered, new objects go on top.
- Right-click & select "***Z Order***"
  - Either "***Send to top of layer***" or
  - "***Send to bottom of layer***"

Bottom of layer

Versus

Try Again but AVOID the Spikes
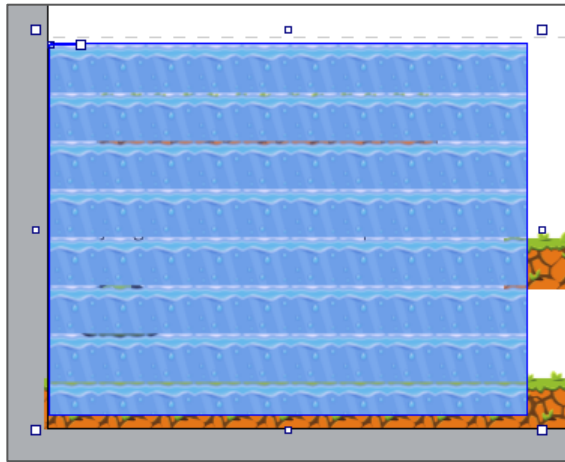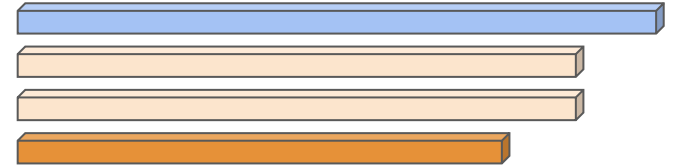
Top of layer

Add an "Elevator"

- Use the "**sine**" and "**solid**" behaviors
- Adjust "**Movement**" property to "**vertical**"
- Adjust "**Period**" property change how long each cycle takes
- Adjust "**Magnitude**" property to cover more distance

Behaviors	
Sine	
Active on start	Yes
Movement	Vertical
Wave	Sine
Period	**7**
Period random	0
Period offset	0
Period offset ...	0
Magnitude	**200**
Magnitude r...	0
Solid	
Initial state	Enabled

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Additional Challenges

- Add a secret area
- Add a portal