Bad Birds Game

Part 1

Play the game we are building:
click

Today's Game

Challenge: Build an Angry Birds knock-off video game where we shoot poop out of a cannon.

Goal: Build the first part of the video today

Features:

- Adjust the cannon based on where the mouse is located
- Leverage physics to launch poo
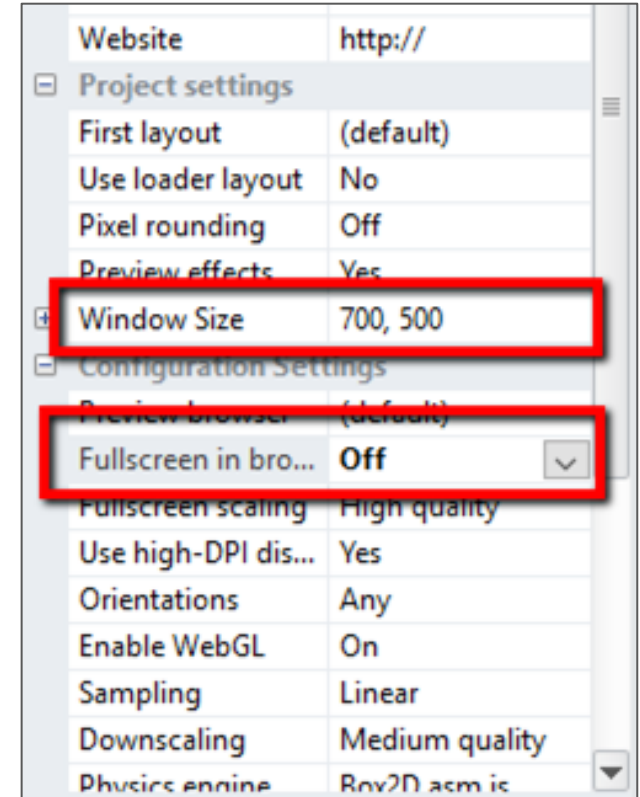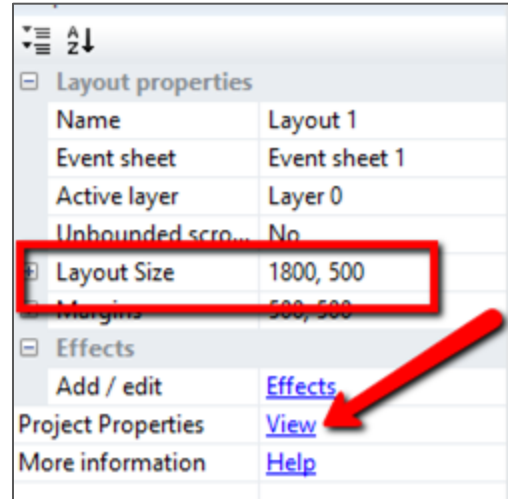
Walkthrough Video (It's GOOD!)
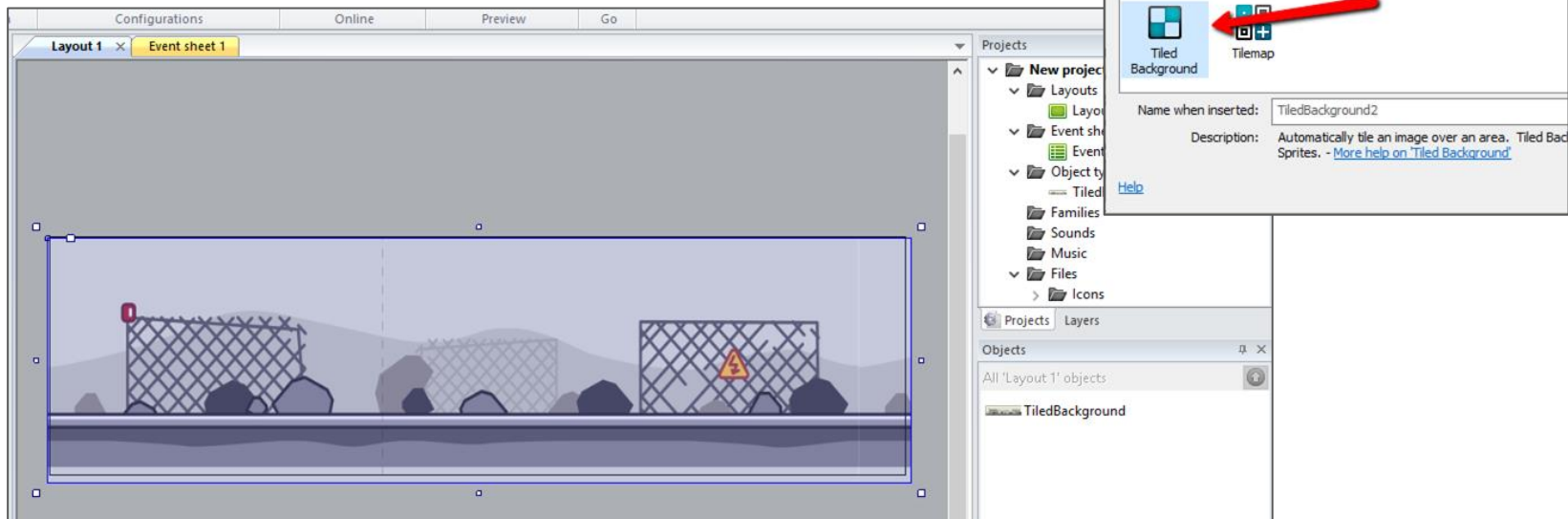
https://youtu.be/PKQ8_h5I0lg

Screen setup

1. Set Layout Size to **1800, 500**
2. Set Project Properties
   ○ Set Windows Size to **700, 500**
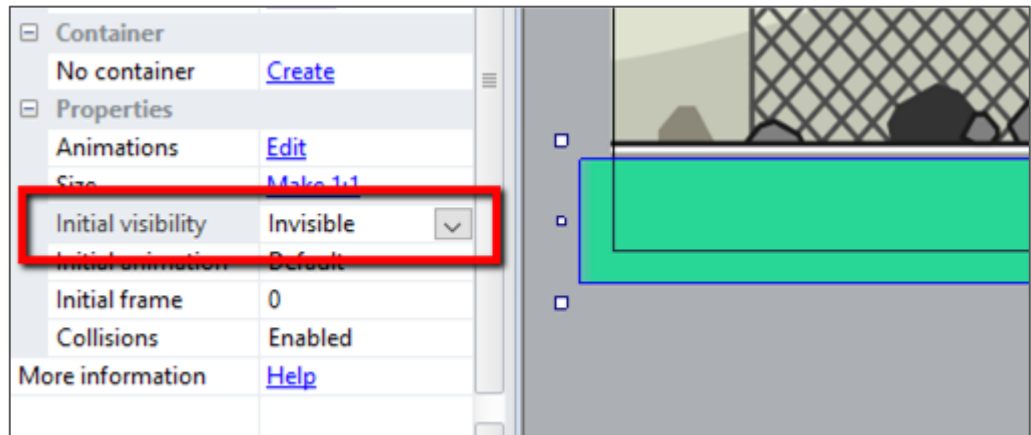
(select "view" next to the "Project Properties")

Create tiled background

1. Right-click
   - "**Insert new object**", "**Tiled background**"
2. Open "**background.png**"
3. Stretch to fit the layout size

Create ground

1. Right-click
   - "**Insert new object**", "**Sprite**"
2. Fill with a color (maybe *green*)
   - Rename sprite to "**ground**"
   - Set property "**Initial visibility**" to "**invisible**"
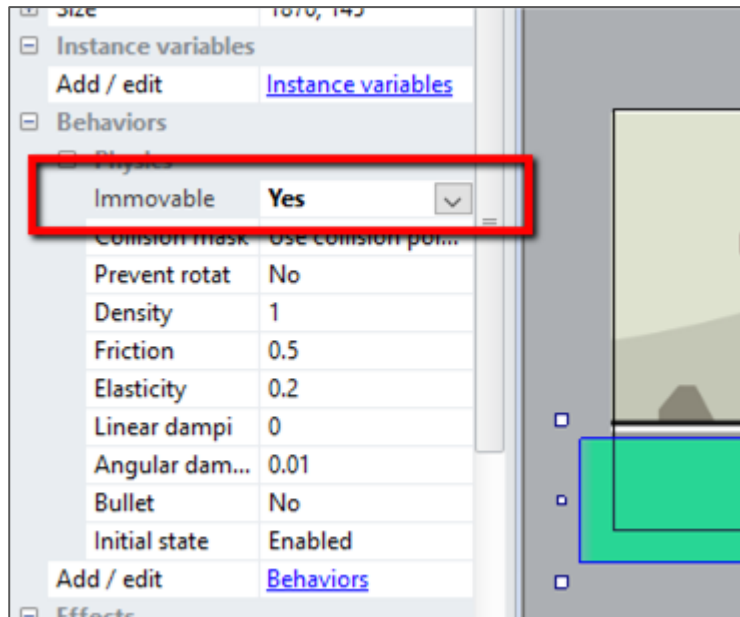3. Setup ground throughout layout

Add Physics to Ground

1. Select "Behaviors"

2. Add a new behavior

3. Choose "Physics"
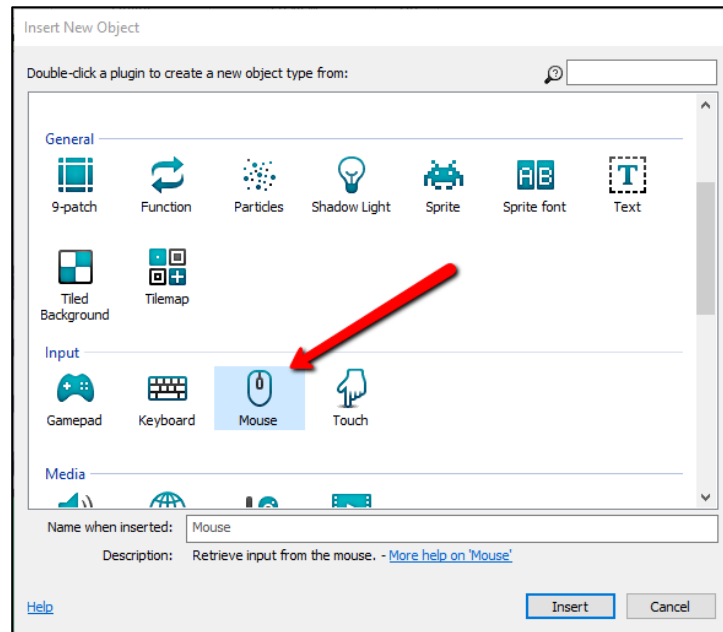
4. Click "Add"

Setup behavior on ground

1. Select the "**ground**" sprite again
   - Set physics property "**immovable**" to "**yes**"
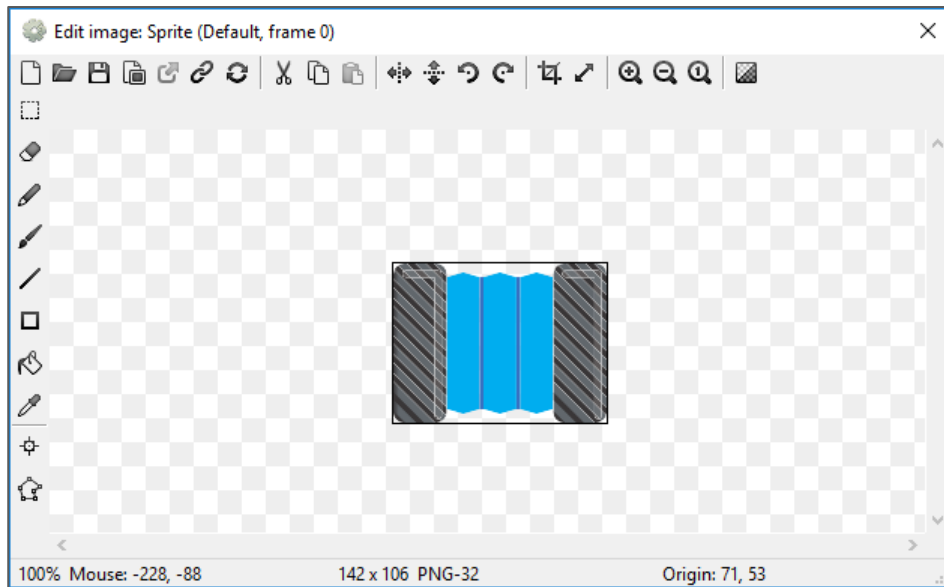   - This prevents our ground from falling

Adding the Mouse

1. Right-click & "**Insert new object**"
2. Select "**Mouse**"
   - This shows a message briefly but doesn't add anything to the layout
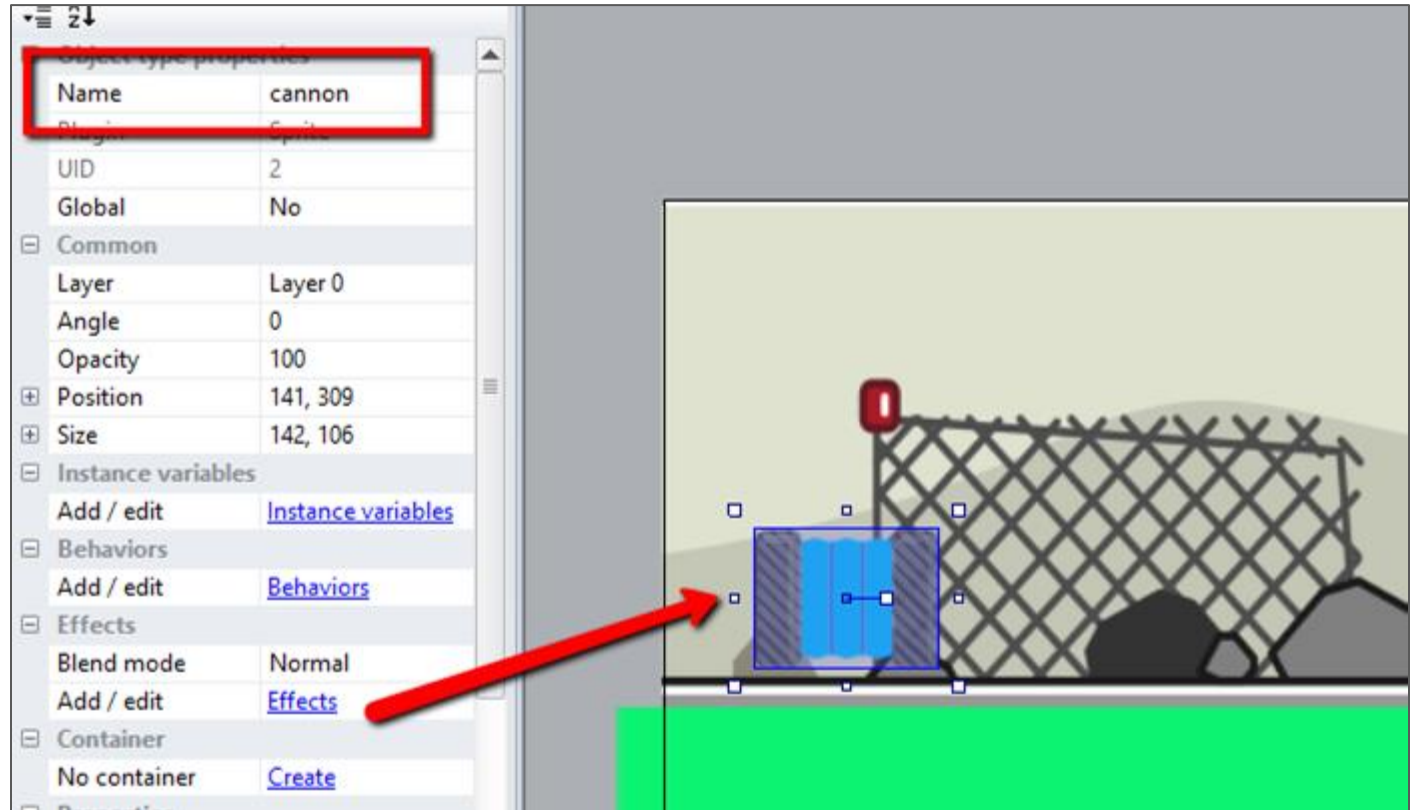   - Now we can use the mouse in our game

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Add cannon

1. Right-click & "**Insert new object**", "**Sprite**"
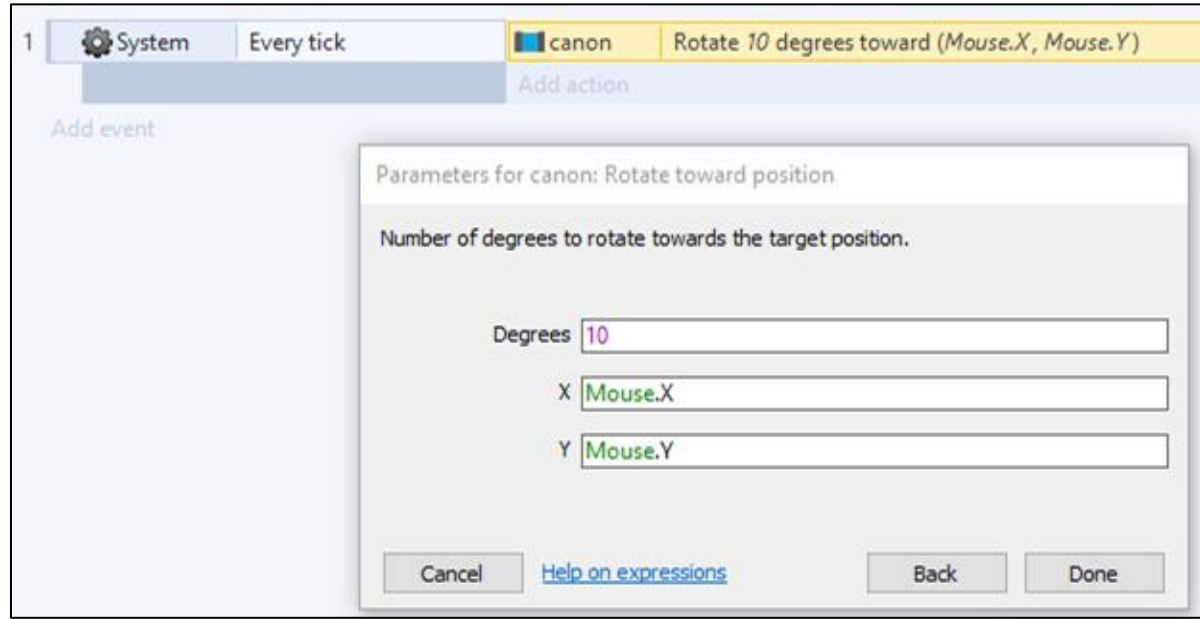2. Open the cannon image (**cannon.png**)
3. Place on the screen

Add cannon

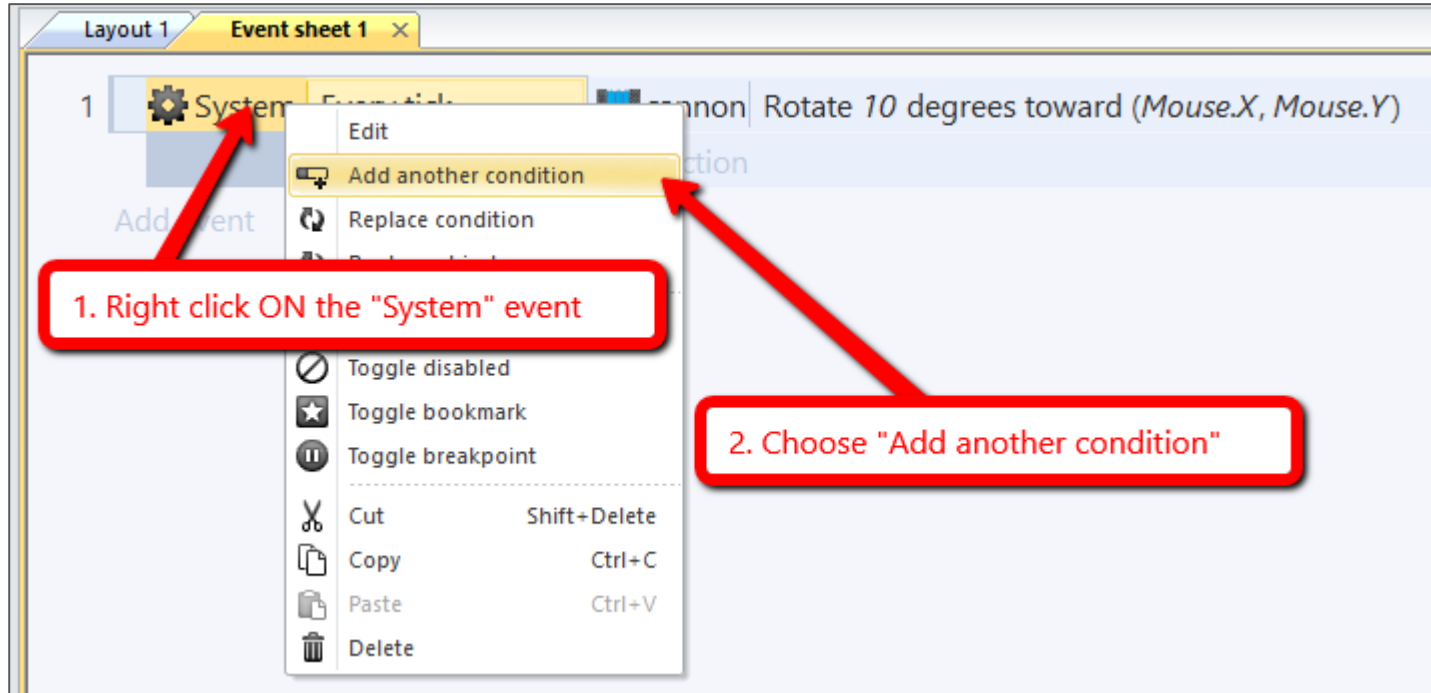1. Name our cannon "cannon"

Track cannon movement

1. Go to Event Sheet
2. Add event: "**System**", "**Every tick**"
3. Add action: "**cannon**", "**rotate towards position**", **10** degrees, X = **Mouse.X;** Y = **Mouse.Y**
4. **Test your cannon!**

Add max cannon range

1. Select "**Add Another condition**"

Add max cannon range

1. Add another event of:
    a. Add 1st event: "**System**" → "**compare two values**"
        ■   **Mouse.X**, "**greater than**", "**140**"
    b. Add 2nd event: "**System**" → "**compare two values**"
        ■   **Mouse.Y**, "**less than**", "**330**"
2. **Test your cannon (should not rotate all the way around)**

|				
	⚙ System	Every tick	▮▮▮ cannon	Rotate *10* degrees toward (*Mouse.X, Mouse.Y*)
1	⚙ System	mouse.x > 140	Add action	
	⚙ System	mouse.Y < 330		

Adjust cannon pivot point

1. Move pivot point (**Origin image point**) around until it looks correct.
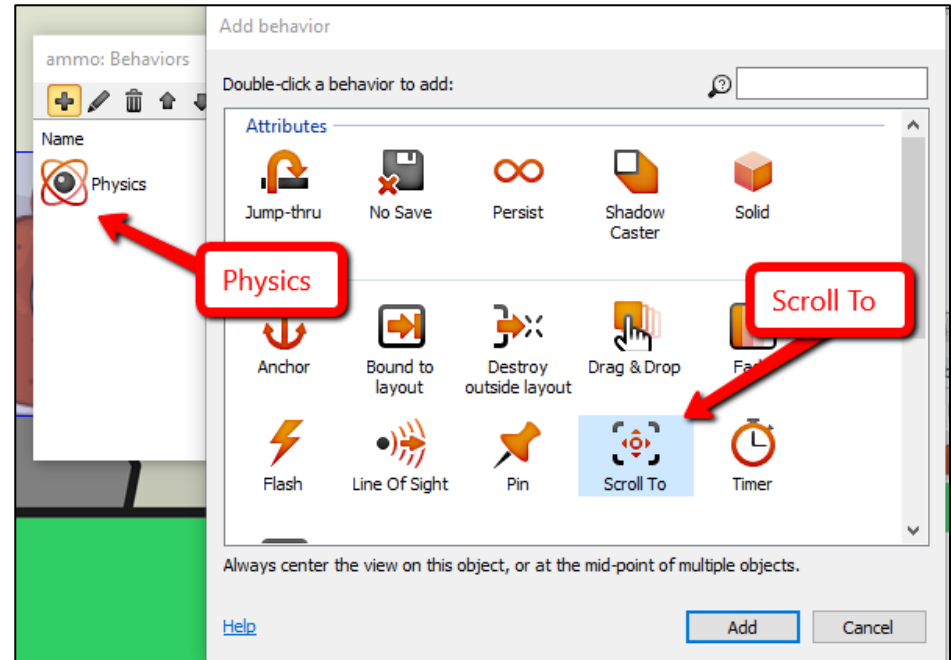2. Just "click" once to move the image point.
3. **TEST**

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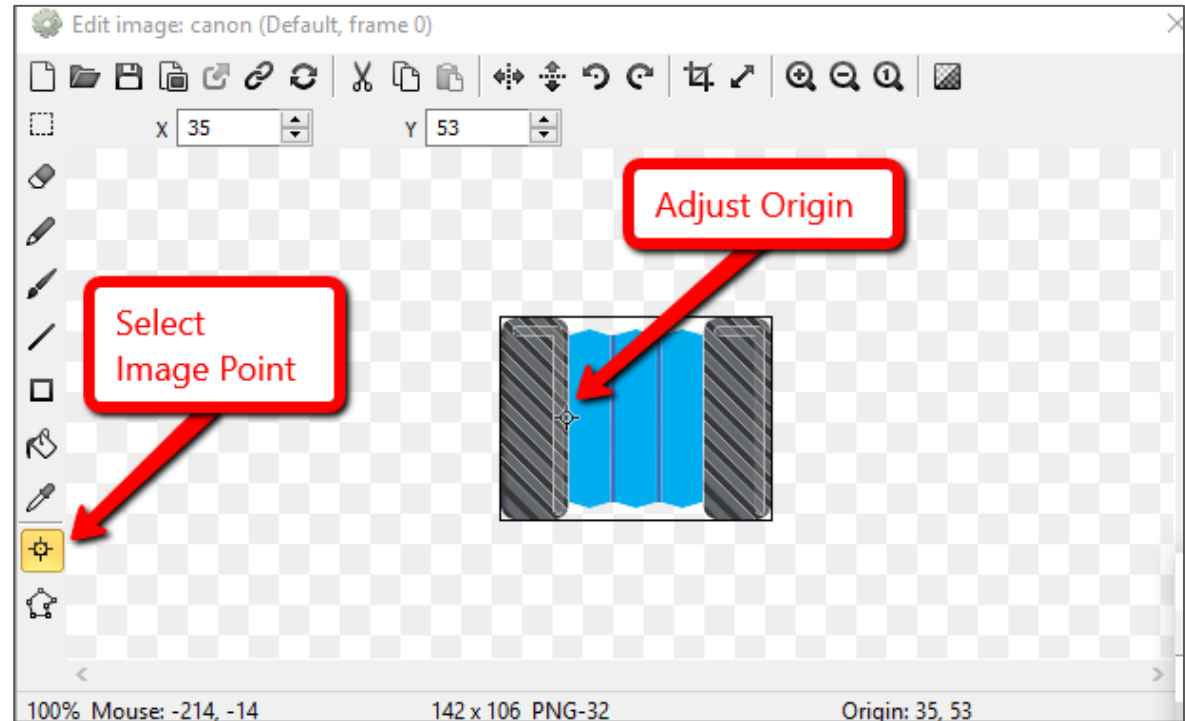
Add ammo

1. Right-click & "**Insert new object**", "**Sprite**"
2. Open the image (**ammo.png**)
3. Place below your ground
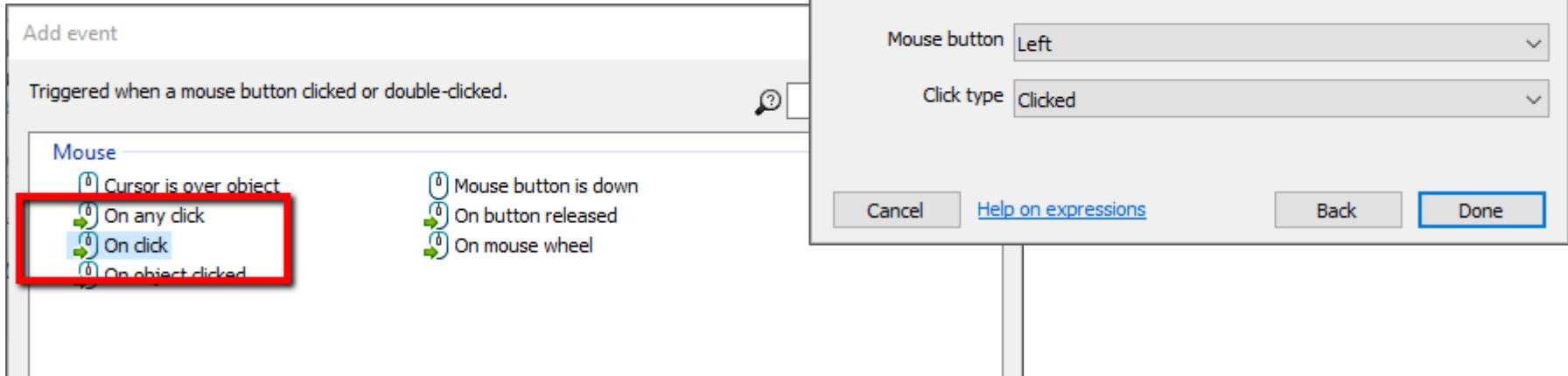4. Adjust the size as needed
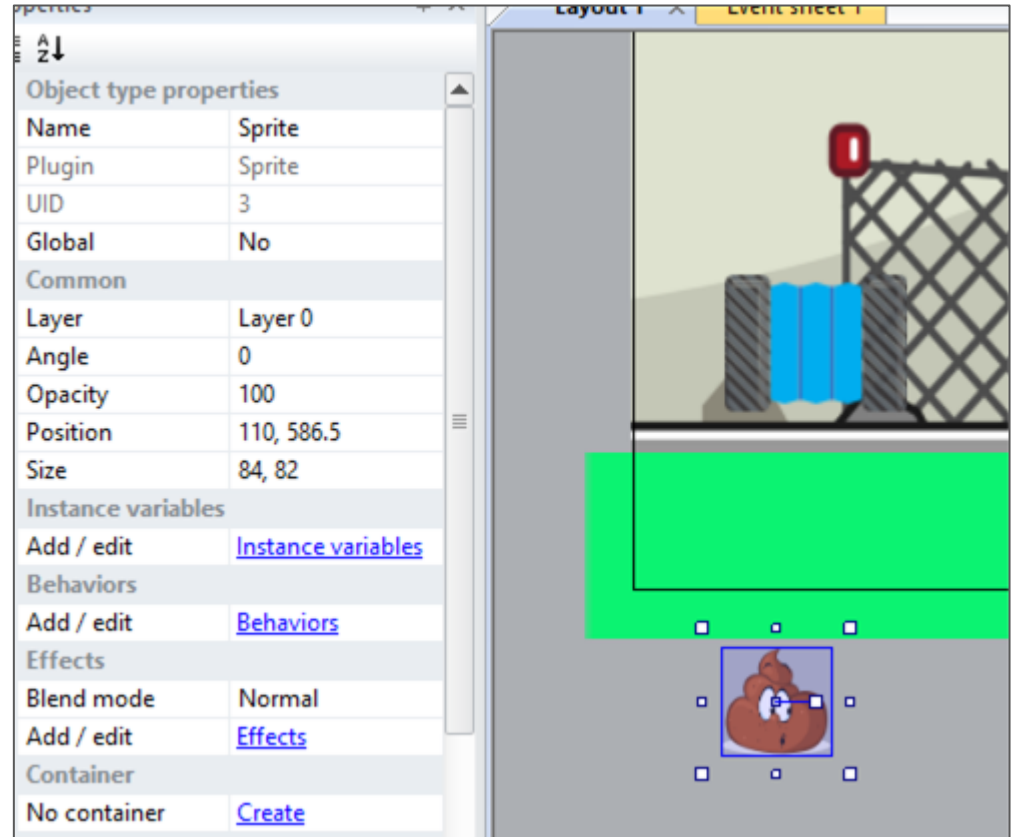
Add ammo

1. Name the ammo sprite "**ammo**"
2. Add behaviors:
   - "**Scroll to**"
   - "**Physics**"

Fire cannonball

1. Add new Event
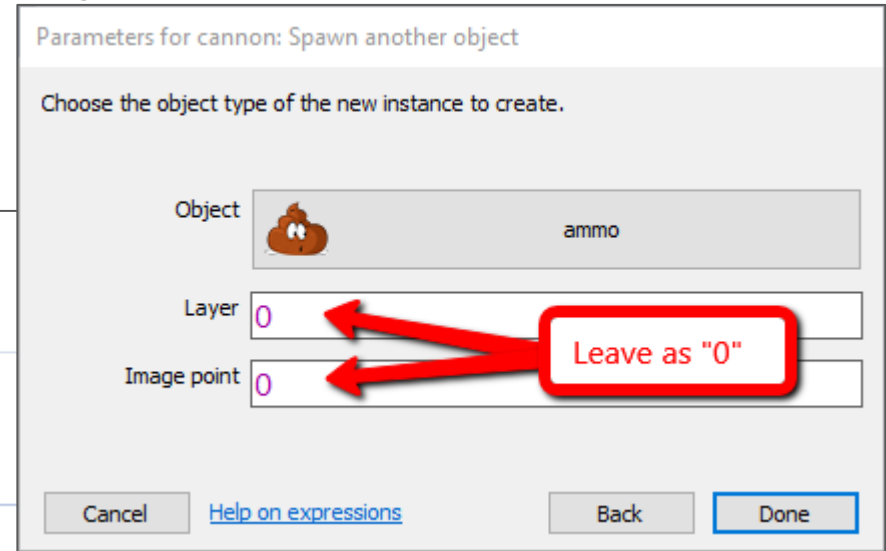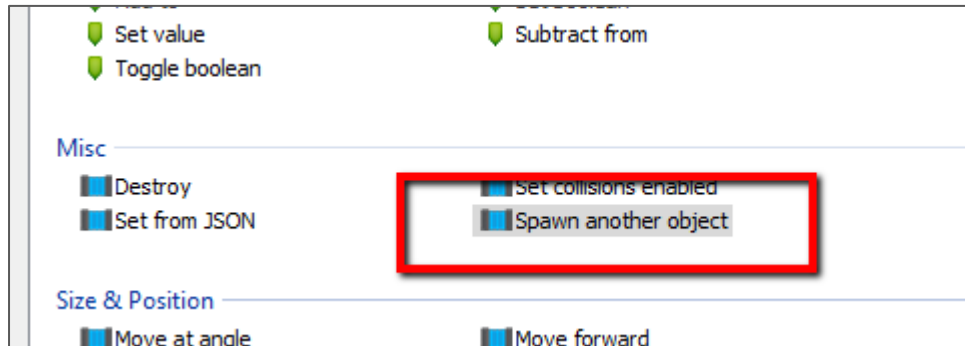   a. "**Mouse**" → "**On click**"
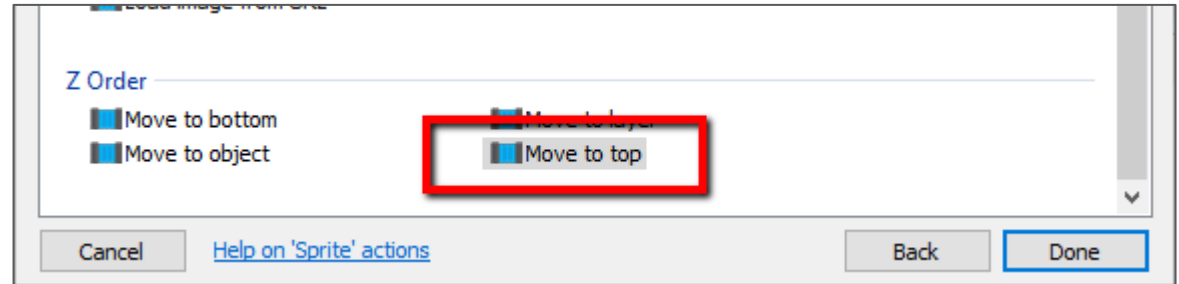   b. Leave it on "Left" and "Clicked"

Fire cannonball

1. Add action:
    a. "**cannon**" → "**Spawn another object**"
        ■ "**ammo**"

Set value   Subtract from
Toggle boolean

Misc
  Destroy   Set collisions enabled
  Set from JSON   Spawn another object

Size & Position
  Move at angle   Move forward

Parameters for cannon: Spawn another object

Choose the object type of the new instance to create.

Object   ammo

Layer   0

Image point   0

Leave as "0"

Cancel   Help on expressions   Back   Done

Fire cannonball

1. Add ANOTHER action:

    a. "**cannon**" → "**Move to top of layer**"

Fire cannonball

1. Add a 3rd action to apply force to ammo:

    a. "**ammo**" → "**Apply force at angle**"

The force to apply.

Force: 1500

Angle: cannon.Angle

Image point: 0

Cancel | Help on expressions | Back | Done

Physics: Forces

Apply force | **Apply force at angle**

Apply force towards position | Apply impulse

Apply impulse at angle | Apply impulse towards position

Set velocity

Physics: Global settings
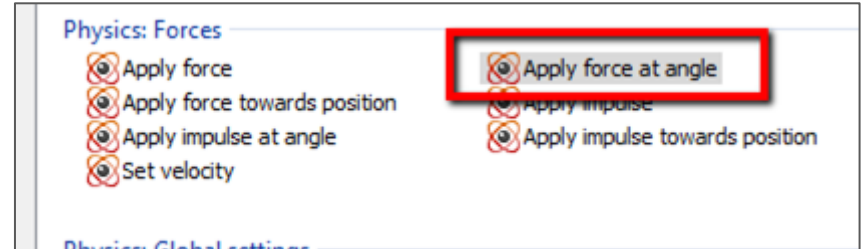
2	Mouse	On **Left** button **Clicked**	cannon	Spawn **ammo** on layer **0** *(image point 1)*
			cannon	Move to top of layer
			ammo	Apply Physics force 1500 at angle cannon. Angle at image point 1
				Add action

Test your cannon

Reload Cannon

1. Destroy the ammo after it lands
   a. Event: "**ammo**" → "**Is sleeping**"
   b. Action: "**ammo**" → "**Destroy**"

Physics
- Compare angular velocity
- Compare velocity
- **Is sleeping**
- Compare mass
- Is enabled

Size & Position
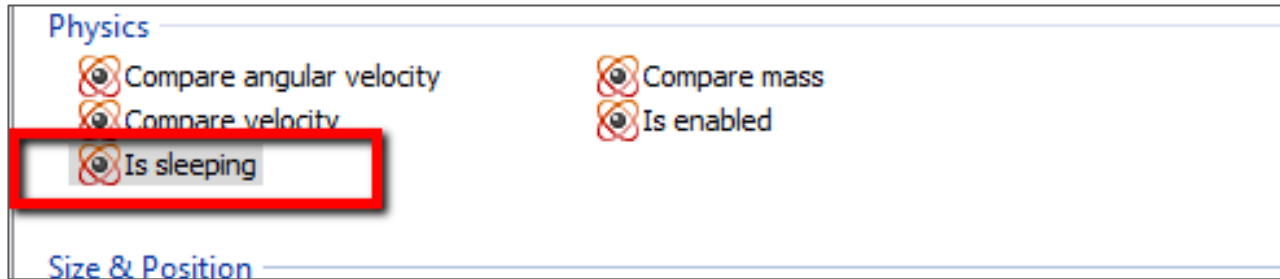
3	ammo	Is Physics sleeping	ammo	Destroy
				Add action

Reload Cannon

1. Destroy the ammo if it falls off the edge
   a. Event: "**ammo**" → "**Compare Y**", "**Greater Than**", "**700**"
   b. Action: "**ammo**" → "**Destroy**"

How to compare the Y co-ordinate.

Comparison	> Greater than	⌄
Y co-ordinate	700	

Cancel   Help on expressions   Back   Done

4	💩ammo	Y > 700	💩ammo	Destroy
			Add action	

Reload Cannon

1. Move the camera back to the cannon for another shot
   a. "**System**" → "**Compare two values**"
   b. First value: **ammo.Count**
   c. Comparison: **= Equal to**
   d. Second value: **0**

Reload Cannon

1. Action to scroll camera
   a. "**System**" → "**Scroll to object**"
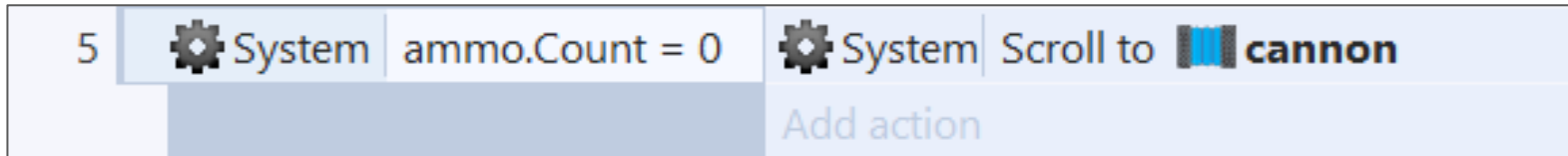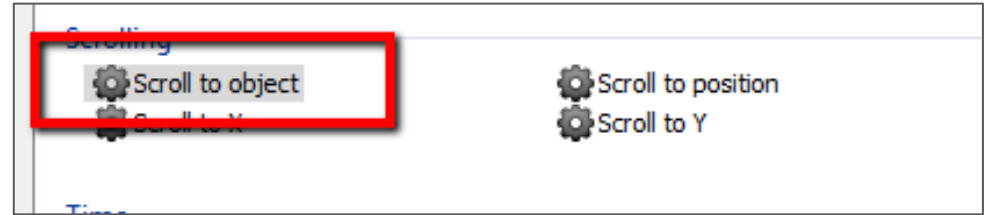
Only fire ONE ammo

1. Add additional condition to **Mouse Click** event
    a. "**System**" → "**Compare two values**"
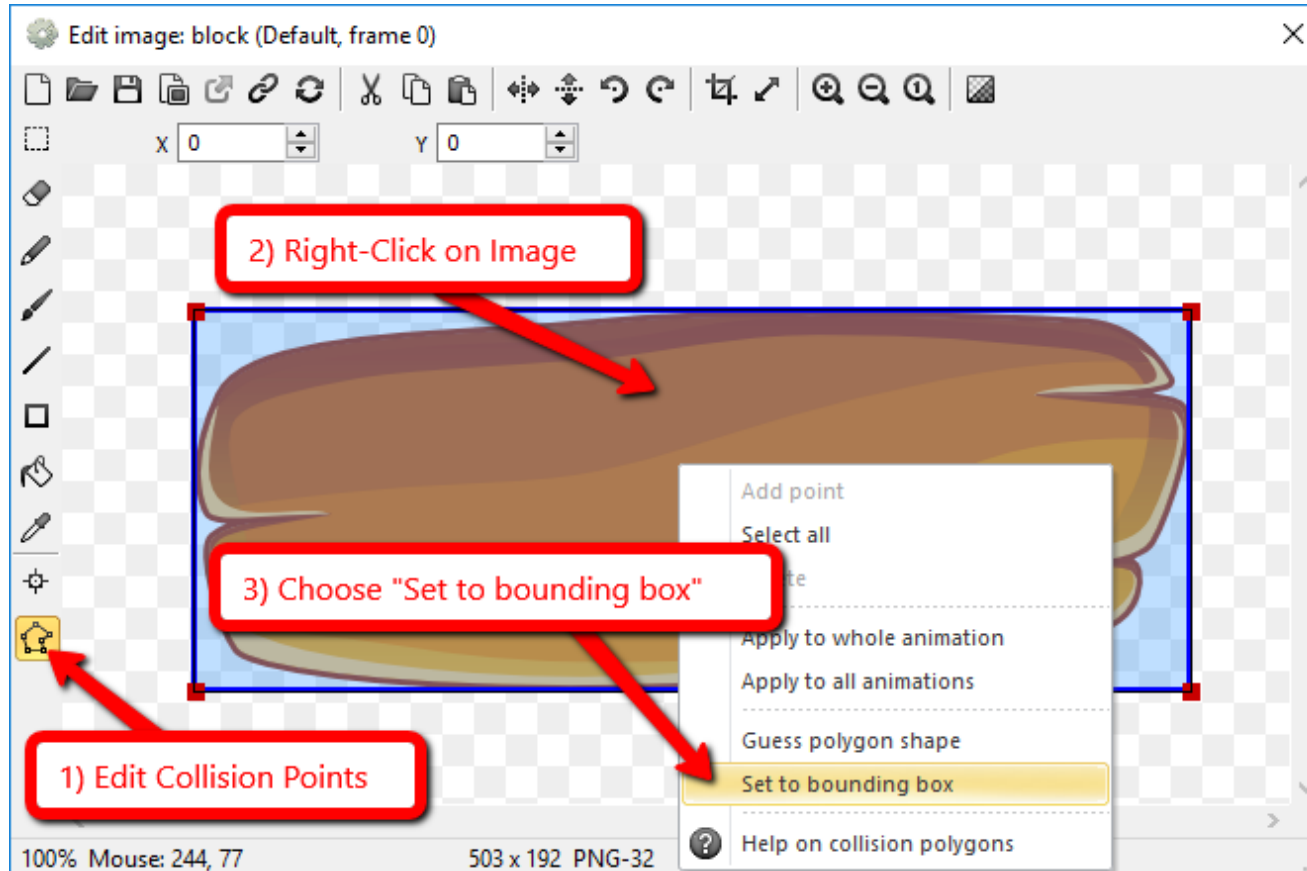   ■ "**ammo.Count = 0**"

Build target platform

1. Right-click & "**Insert new object**", "**Sprite**"
2. Open block image "**block**"
3. Fix collision points (NEXT SLIDE)

Build target platform

Fix "Collision Points"
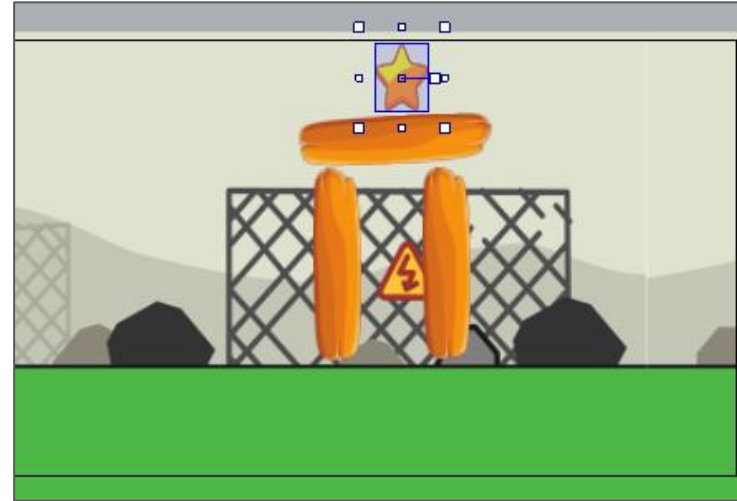

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Build target platform

1. Name the sprite to "**block**"
2. Add behavior "**Physics**"
3. Create structure
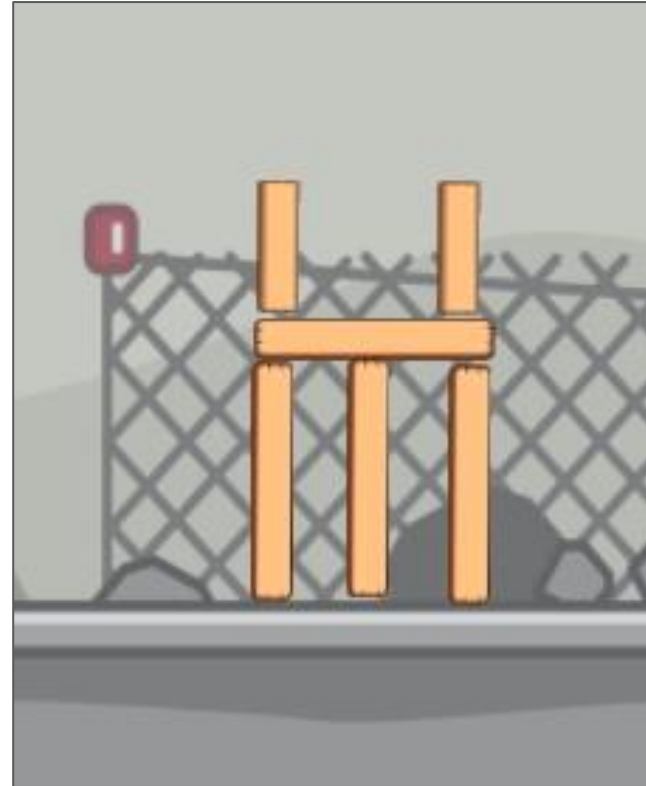
Create prize
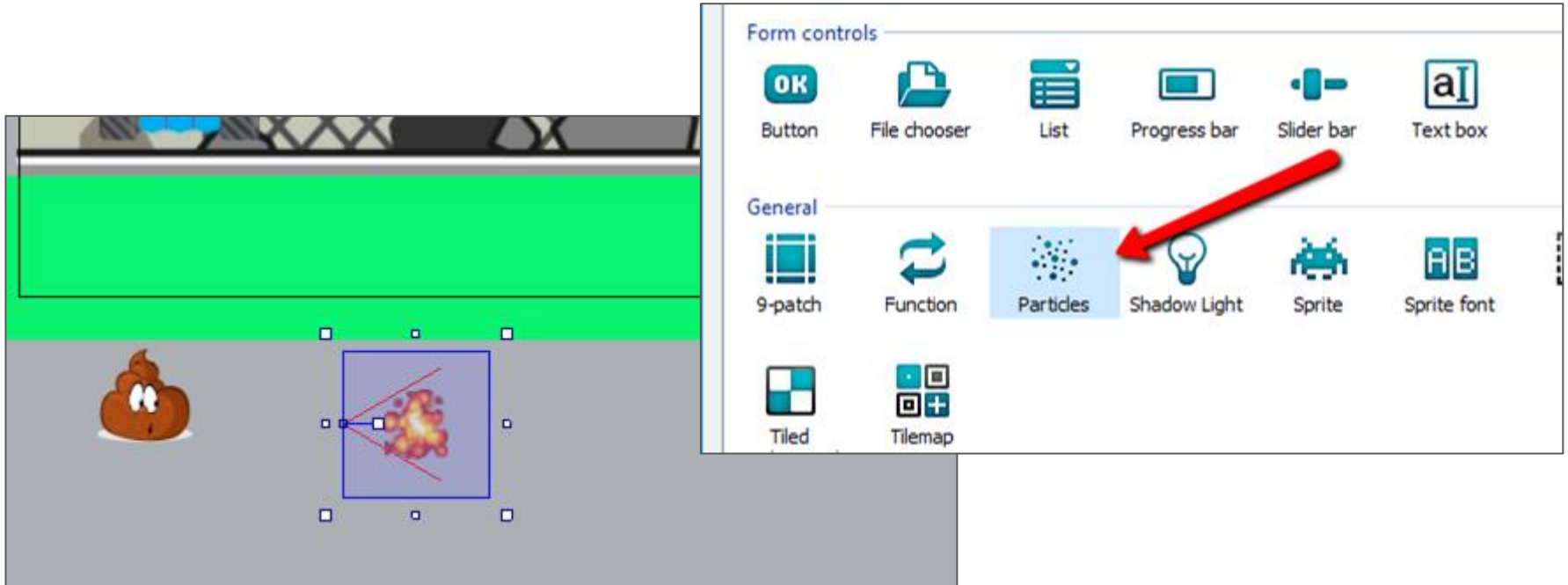
1. Right-click "**Insert new object**", "**Sprite**"
2. Open prize object (**prize.png**)
3. Name the sprint "**prize**"
4. Add behavior "**Physics**"
5. Adjust on the screen
6. Reload the page to reset the layout
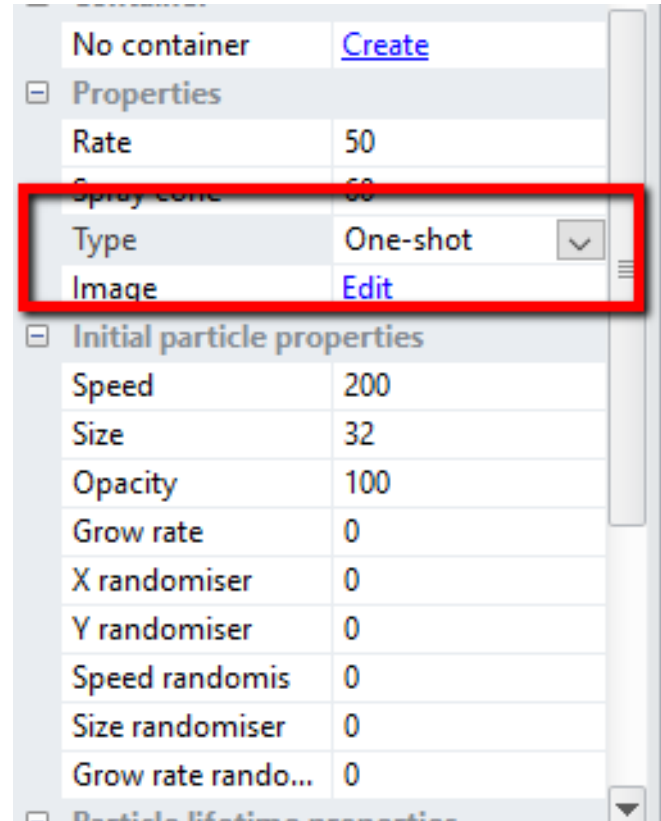   *(doesn't reload yet)*
7. **TEST**

Explode Prize

1. Right-click "**Insert new object**", "**Particles**" *(NEW)*
2. Open image (**explosion.png**)
3. Place BELOW the ground

Explode Prize

1. Adjust particles properties

No container	Create
Properties	
Rate	50
Spray cone	60
Type	One-shot
Image	Edit
Initial particle properties	
Speed	200
Size	32
Opacity	100
Grow rate	0
X randomiser	0
Y randomiser	0
Speed randomis	0
Size randomiser	0
Grow rate rando...	0
Particle lifetime properties	

Explode Prize Events

1. Create event for prize hitting the ground
    a. "**prize**" → "**Spawn another object**", "**explosion**", layer "**main**"
    b. "**prize**" → "**Destroy**"
    c. "**System**" → "**wait**", **3** seconds
    d. "**System**" → "**Restart layout**"

Part 2

- Add multiple levels
- Add targeting trails
- Track the score & attempts
- Make breakable blocks