Game Making with Construct 3

A short introduction

- Construct 3 is a game engine

  - It is a software that is used to create game software

  - The games made can then be published in various ways, including on the itch.io -platform

  - You save the game by going to Menu > Export. You can download the game in various formats, but we're recommending HTML5.

  - To run the game, you need to host it. You can either host on a site like itch.io, your own website, or use a temporary hosting site such as https://app.netlify.com/drop

Working with Construct 3:

To launch **Construct 3**, go to https://editor.construct.net/ . Chrome is better supported than Firefox.

Creating your project:

You can work with the free version of construct by pressing 'New Project'

- Start by choosing a game size. This defines the size of the game screen.

- For a fullscreen game, choose 1080p Landscape

- Name your project

- Press **Create**

Starting to make your game:

In the Properties panel, change the Size to match the project size; eg. 1920 x 1080 (optional). This way you'll see the full game space. If you have an access code, you can log in by going to Menu > Account > Enter Access Code.

Adding a player sprite:

- **Right click** (Mac: Ctrl + click) anywhere on the Layout to **Insert new object**.

- In the menu, scroll until you find **Sprite**
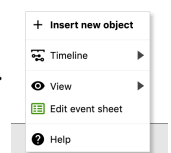
- Crosshairs should appear on your cursor. Choose a location on the Layout, and click.

- You can draw your sprite in the editor (similar tools to MS Paint), or import an image by clicking the folder icon

  - If you wish to create animations, you can add frames and turn on Loop to keep the animation playing.

  - When you're done, close the sprite editor window by clicking the corner

Next, let's make something move.

Adding an input:

Our game will work with mouse input. Let's add that:

- **Right click** (Mac: Ctrl + click) anywhere on the Layout to **Insert new object**.

- In the menu, scroll until you find **Mouse Input**
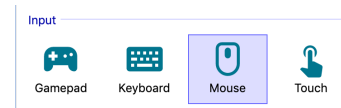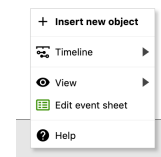
Event sheet - code:

Navigate yourself to the **Event Sheet**, and click **Add event** to add a little movement code to the player:

- **Add Event** > System > (General) **Every tick**

- **Add Action** > **Player** > Set position > **Write X:** 300, **Y:** Mouse.Y

- If you now play the game, the Sprite can move!
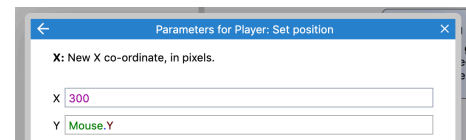
Adding Behaviours (scripts):

For the example - starting point - game, you need to add objects for the player to interact with. We'll call this Object 'Enemy':

- Create another sprite, and scale it down if you want to.

To make things happen in your game, you add **scripts** - premade code snippets.

- Right click on your enemy Sprite in the Layout. In the menu, choose **Add > New behaviour**

- Add the behaviours Bullet, and Destroy Outside Layout

  - You can also add more behaviours, such as Solid (items can't pass through) - or Bound to Layout (object cannot move outside the screen)

- Test your game and drag the Enemy-object into a good starting position so that it hits the player.

Coding - the Event Sheet:

Let's make something happen when the Enemy hits the player. Navigate yourself to the Event Sheet, and click Add event. Choose the Enemy-object and add a **Collisions** > **On collision with another object**. Press Next. In the dropdown menu, choose the Player sprite.

- Press **Add action >** Misc > **Destroy**

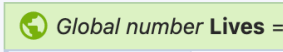- Choose whether it is the Enemy or the Player that is destroyed on impact

Next, let's automatically create more Enemies - spawn more enemies:

- Add Event > System > Time > **Every X Seconds.** Write 1.0 seconds.

- Add Action > System > Create Object. Choose the Enemy sprite in the dropdown, and type in coordinates.

- You can add randomness to make the enemies appear at different points on the screen.

Let's add a counter with lives:

- Add object > Text. Move it to a good location on the screen. Type in "5"

To make the counter interactive, we need to create a value that can be changes, a **variable**.

- Below the event sheet, press Add > Add global variable. Call it Lives. Choose an initial value, say 5, for how many lives we give the player.

- Your variables are shown above the rest of the event sheet: 🌐 *Global number* **Lives** = 5

- On the same event where the Enemy is destroyed, add a new action: Add action > System > Global & Local Variables > Subtract from. Choose the variable Lives, and type 1 in the Value field.

- Let's make the text update. In this same event, Add action > Choose the text field > Text > Set text. Write in Lives.


Game over:

If we want it to be game over when lives go below 0, we can create another layout for it, and use a system event to check the variable.

- In the Project panel, right click Layouts, choose Add layout

- You can create a text here, saying Game over

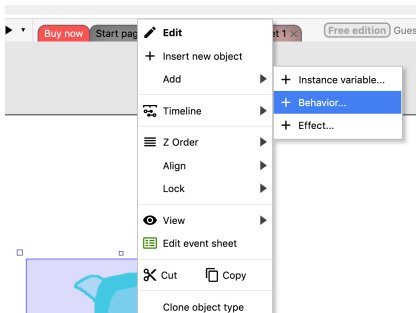In the event sheet, create another event:

- System > Compare variables > Variable: Lives; Less or equal to: 0.

- Add action > System > Layout > Go to layout > Layout 2.

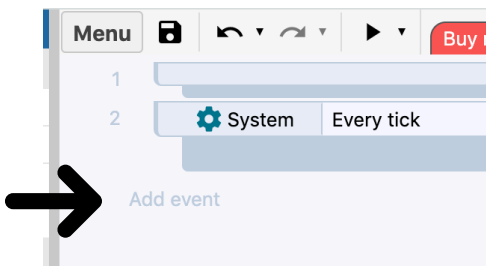Congratulations, you've created your first game!
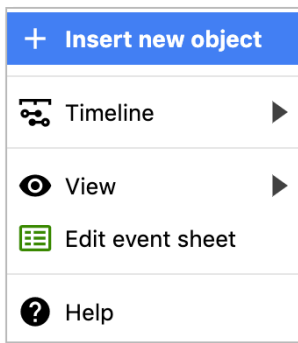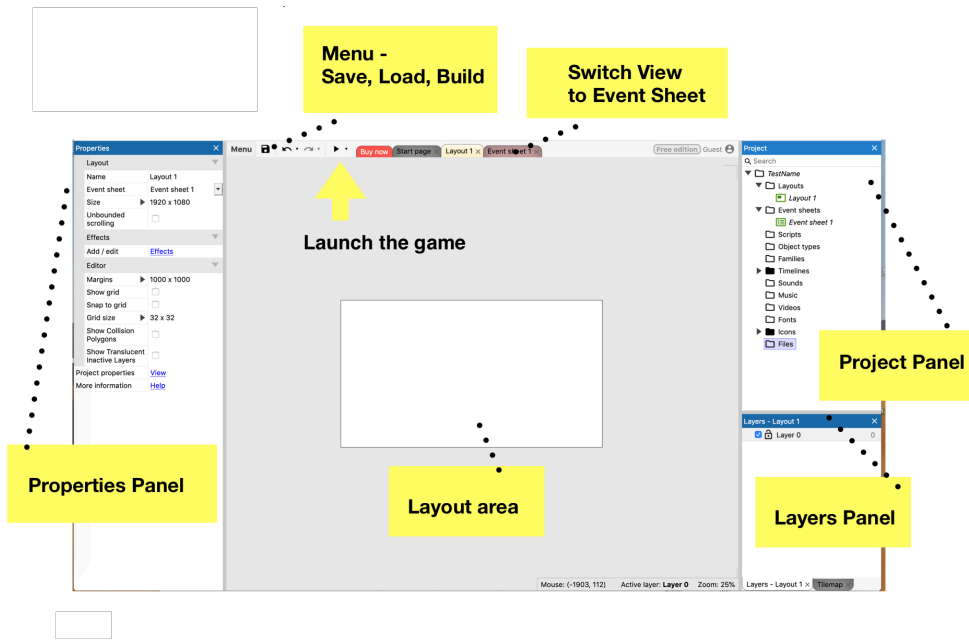
1. Creating a new object - Right-click in the layout area and choose **"+ Insert new object".**

Choose which type - In this tutorial we use *Sprite, Input* and *Text.*

2. Adding a behaviour - **Right-click an object** and choose **"+ Behaviour".**

Choose which behaviour - in this tutorial, we use Bullet.

3. Adding an event - In the **event sheet**, press **"add event"**

Choose what the event is caused by: *System*, *Sprite* or *Mouse*. Now you can add an Action.

Below: Example of event and action.