

## 1 - Title Slide: The Flip Intro Section 1



## 2 - Introduction

### Introduction

If you're using the Game:IT curriculum, **YOU MUST** complete both sections of the Flip Intro, as it is the starting point for the Flip the Robot Monkey game.



The Flip Intro will teach you some of the basics of game development and get you started in Construct 2. By following these step-by-step instructions, you'll learn how to build your first simple, yet functional, game.

**If you're using the Game:IT curriculum, YOU MUST complete both sections of the Flip Intro, as it is the starting point for the Flip the Robot Monkey game.**

## 3 - New Empty Project

To begin, open a new Construct 2 project by going to the File menu and selecting **New**.

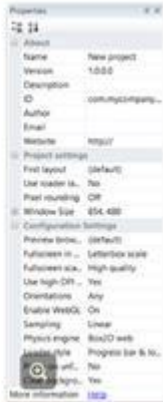
Select **New empty project** and click **Open**.



## 4 - Properties

On the left side, you'll see the Properties Bar.

This is currently showing the properties for the project, but will change and show the properties for what you are currently working on (layout, sprite, background, etc.).



The screenshot shows a 'Properties' window with a tree view on the left and a list of settings on the right. The tree view is expanded to 'Project settings'. The settings list includes: First layout (default), Use loader la. No, Pixel rounding Off, Window Size 128, 432, Configuration Settings, Printer (none) (default), Fullscreen on... Letterbox scale, Fullscreen size High quality, Use high DPI Yes, Orientations Any, Enable WebGL On, Sampling Linear, Physics engine Box2D web, JavaScript Progress bar & No, and Show FPS Yes. A 'More information' link is at the bottom.

## 5 - Naming Your Game

In the About section of the Properties bar is the Name field. Change the project name to **Flip**.

Don't forget to save your game; you wouldn't want to lose all your sweet stuff. Click **File > Save as Single File** and name your game **FlipIntro\_yourname**.

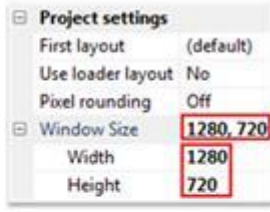


The screenshot shows the 'About' section of the Properties window. The 'Name' field is highlighted with a red box and contains the text 'Flip'. Other fields include 'Version' (1.0.0.0) and 'Description'.

## 6 - Window Size Settings

Still in the Properties bar, change the Window Size (in the Project settings section) to a width of 1280 and height of 720. Both of these numbers are using pixel units.

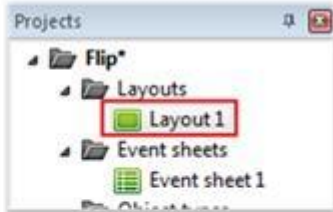
You can do this by typing the comma separated numbers in the Window Size box, or by expanding the Window Size property by clicking the + symbol and typing the width and height in their respective boxes.



The screenshot shows the 'Project settings' section of the Properties window. The 'Window Size' property is expanded, showing 'Width' set to 1280 and 'Height' set to 720. Both values are highlighted with red boxes. Other settings include 'First layout (default)', 'Use loader layout No', and 'Pixel rounding Off'.

## 7 - Layouts

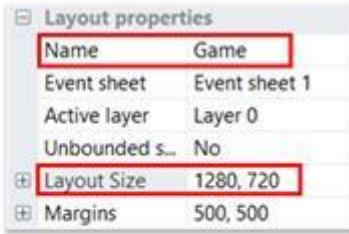
Now that the window size is set, you'll want to set the size of the layout to 1280 x 720, as well. To do this, go to the Projects bar (located on the right side) and click on **Layout 1** from inside the Layouts folder.



The screenshot shows a 'Projects' panel on the right side of the interface. It contains a tree view with the following structure: 'Flip\*' (expanded), 'Layouts' (expanded), 'Layout 1' (selected and highlighted with a red box), 'Event sheets' (expanded), and 'Event sheet 1'. Below the text and image is a decorative horizontal bar with five colored segments: blue, green, light green, yellow, and red.

## 8 - Game And Layout Properties


Just like in the Project settings, you need to change the Name and Layout Size. Change the Name to **Game** and the Layout Size to 1280 x 720. This can also be entered by typing the comma separated numbers in the Layout Size box, or by expanding the Layout Size property by clicking the + symbol and typing the width and height in their respective boxes.



The screenshot shows the 'Layout properties' panel. It contains a table of properties with the following values: Name: Game (highlighted with a red box), Event sheet: Event sheet 1, Active layer: Layer 0, Unbounded s...: No, Layout Size: 1280, 720 (highlighted with a red box), and Margins: 500, 500. Below the text and image is a decorative horizontal bar with five colored segments: blue, green, light green, yellow, and red.

## 9 - Layout

The white area in the center of your screen is the layout...the design view where you create and position objects. Think of a layout like a game level or menu screen. In other tools, this might have been called a room, scene, stage, or frame.



Objects placed in the layout will be visible to the player. Objects placed in the gray area cannot be seen.

The screenshot shows a design view with a large white rectangular area in the center, representing the layout, surrounded by a gray border. A small magnifying glass icon is visible in the bottom-left corner of the design view. Below the text and image is a decorative horizontal bar with five colored segments: blue, green, light green, yellow, and red.

## 10 - Basic Level Setup and Gameplay

**Basic Level Setup and Gameplay**

Now that the project is set up, you're ready to begin building the game! The first thing you're going to add to your game is a background.

To add an object, right-click anywhere on the layout and select **Insert new object**.



The screenshot shows a window titled 'Event sheet 1' with a tab 'Game'. Inside the window, a yellow button labeled 'Insert new object' is highlighted with a red rectangular box. Below the button, the text 'Edit image' is visible. A mouse cursor is positioned over the button.

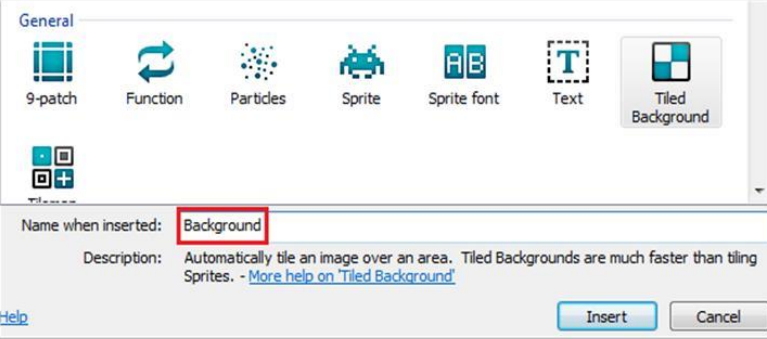
## 11 - Tiled Background Object

The Insert New Object window will open. This window will allow you to insert different types of objects into your project. Each one will have distinct features and attributes.

Click once on the **Tiled Background** object (within the General category) to highlight it. Below, you'll see a field titled "Name" when inserted. In this field, type **Background** and then click the Insert button to **insert** the object.

**Show Window**

## Background Image (Slide Layer)



The screenshot shows the 'Insert New Object' window. The 'General' category is selected, and the 'Tiled Background' icon is highlighted. Below the icons, the 'Name when inserted:' field contains the text 'Background'. The 'Description:' field contains the text 'Automatically tile an image over an area. Tiled Backgrounds are much faster than tiling Sprites. - [More help on 'Tiled Background'](#)'. At the bottom, there are 'Insert' and 'Cancel' buttons.

## 12 - Tile Backgrounds

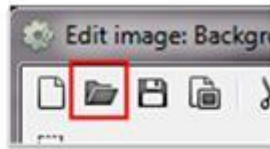
Now you will see a set of cross-hairs appear on your layout. The cross-hairs represent where the object will be inserted.

Click towards the top-left of your layout. This will bring up the image editor for the Tiled Background object type.

To learn more about tiled backgrounds, [Click Here](#)

## 13 - Load Image

In the top toolbar, click the **Load Image from a File** button and navigate to where the assets have been saved (ask your teacher for the file path).



Select the file named **Background** from the Flip Intro Assets folder and click **Open** or double-click.

## 14 - Background Image

With your background image inserted, click the red X to save and close the Image Editor window.



## 15 - Background Positioning

Click on the Background object in the layout to select it. Notice the Properties bar now shows the properties for the background. Change the Size to 1280, 720 and the Position to (0,0).

Common	
Layer	Layer 0
Angle	0
Opacity	100
Position	0, 0
Size	1280, 720

Construct 2's positioning starts at the top-left corner at X = 0 and Y = 0 (0,0). By setting the background object's position to 0,0, this will place the background object's top-left pixel in that position.

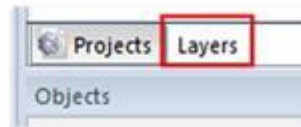
## 16 - Layers

You can see that the background now covers the entire layout. Before you add another object to the game, you'll add a new layer to your game. Layers allow you to easily stack multiple objects on top of one another and control how they appear in your game.

Like in Photoshop, you can have more than one layer. The different layers that are common in games are for your Backgrounds, Text, and Sprites.

## 17 - Layers

To get to the Layers Bar, click the tab titled **Layers** below the Projects Bar and above the Objects Bar on the right side of the screen.



There are other features of layer (including how they appear when the game scrolls) that you'll look later in your game. To learn more, [Click Here](#)

## 18 - Layers Rename

First, rename the current layer. To do this, you can either click the layer to make it active and then click the **Rename** button (pencil image) at the top of that bar. Or, you can right-click the layer and select **Rename** from the menu that appears.



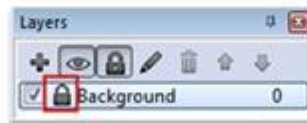
To learn more about the Layers Bar,

[Click Here](#)

## 19 - Padlock

Use either of the methods described, and when the text box appears, rename the layer to **Background**.

Click the **Padlock** image next to the name to lock the layer. This prevents you from accidentally moving it.



## 20 - Adding A New Layer

Now add a new layer to your layout. To do this, click the Plus button to add a new layer.

Layers at the bottom of the list are displayed at the back (e.g. background objects), and layers at the top of the list are displayed at the front.



## 21 - Main Layer

Rename the new layer **Main** and click on it to make sure it's the active layer.

If you are ever unsure of which layer is active, remember it is displayed on the Status Bar.



## 22 - Sprite Object

You're now ready to add Flip the Robot Monkey to your game. Right-click on the layout and add a new object. For the object type, select **Sprite** and name it **Flip**. Click **Insert** when this is done.

To learn more about Sprites, [Click Here](#)



## 23 - Flip Object

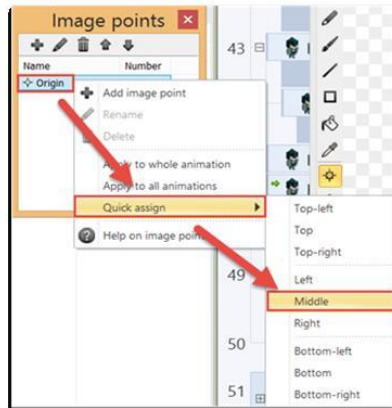
The cross-hairs appear and will indicate where the sprite will be placed. Click somewhere on the left-hand side. This will open the image editor. Notice that when you click the **Open** button, in the provided assets, you need to select the file named **Flip**.







## Image Points (Slide Layer)



## 27 - Add Animation Frames

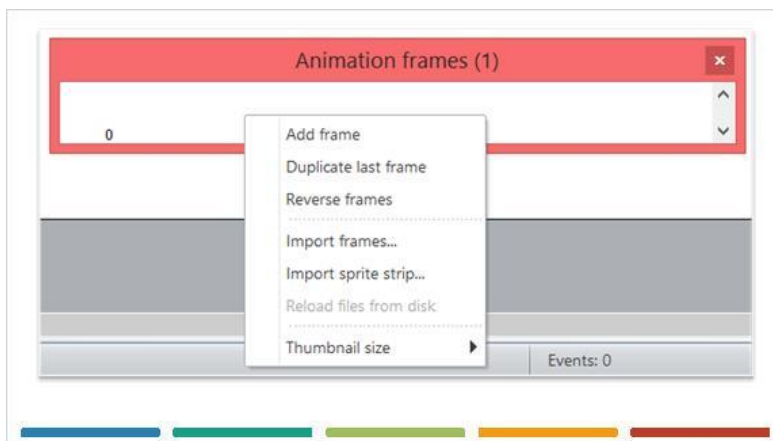
The bottom window is the Animation frames window. This handles all the frames of an animation and displays them all down there. Every image equals a frame.

To see the options for this window, you have to right-click whitespace. These options will be explored in more detail in later sections.

To learn more about the Animation Frames Window, [Click Here](#)

Show Animation Frames

## Animation Frames (Slide Layer)

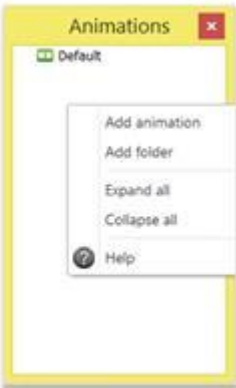


## 28 - Add Animation

The right window is the Animations window. This is where you can make different animations. Right now, there is only the Default one, but you will add to this later on.

You also can right-click in this window for more options.

To learn more about Animation Window, [Click Here](#)



The screenshot shows a window titled "Animations" with a red close button. Inside, there is a "Default" folder icon. A context menu is open, listing: "Add animation", "Add folder", "Expand all", "Collapse all", and "Help" (with a question mark icon).

## 29 - Image Editor

The middle window is the one that you will use the most often. This is where you edit and create your images.

[Close](#) the image editor.

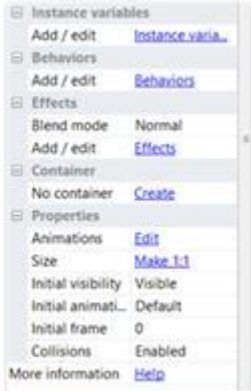


The screenshot shows a window titled "Edit Image (by Default Name)". It features a toolbar at the top with various editing tools like crop, rotate, and zoom. The main canvas shows a cartoon character with a white body and orange accents. The bottom status bar displays "2014-01-15 10:00 PM 1024x1024 Origin: 20, 50".

## 30 - Properties

If you notice, sprites have a lot of customization options in the properties bar.

These added options in the properties bar are Instance variables, Behaviors, Effects, Container, and Properties.



The screenshot shows a vertical list of property categories and their values:

- Instance variables: Add / edit [Instance varia...](#)
- Behaviors: Add / edit [Behaviors](#)
- Effects: Blend mode Normal; Add / edit [Effects](#)
- Container: No container [Create](#)
- Properties: Animations [Edit](#); Size [Make 1:1](#); Initial visibility Visible; Initial animat... Default; Initial frame 0; Collisions Enabled; More information [Help](#)

## 31 - Variables, Behaviors, And Effects

Instance variables are variables that you assign only to certain objects. These can be something like Health, Score, Lives, or Powerups.

Behaviors are preprogrammed functionality for objects. Some examples of these are making an object solid, making an object not able to leave the layout, turret movement, and custom movement.

Effects are special effects that you can add to objects. Some examples are glow, intensity, and lighten. You will mostly use them for text objects.

## 32 - Container And Properties

The next section is Container. This is something that you will never use, but it basically can put two objects in one place and have one do the movement while the other can swivel to shoot. The container makes objects have separate movements but has them stay together.

Lastly are Properties. For sprite objects, you can turn initial visibility off and change the initial frame for animations. For text, this is where you would change your font, size, and alignment.

## 33 - Behaviors

Next, you'll add a behavior to the Flip object. Behaviors add predefined functionality to an object. In this case, you'll add the Platform behavior. This will give the object the ability to move left and right as well as jump.

To add a behavior, go to the Properties Bar on the left side of the screen and click the [Behaviors](#) link.

To learn more about Behaviors,

[Click Here](#)



## 34 - Platform Behavior

In the Behaviors window that appears, click the **Plus** button to add a new behavior. In the Add behavior window, scroll to the Movements section and double-click the **Platform** behavior to add it.

To learn more about the Platform behavior, [Click Here](#)



---

---

---

---

---

## 35 - Behavior Window

Close the Behavior window, and you can run your layout for the first time. To do this, go to the top menu bar and click the **Run Layout** button (Play button). This will run the layout that is active in the editor.

You'll see your layout appear, and Flip will simply fall off the screen. This is due to the fact that the Platform behavior adds gravity to the sprite. To fix this, you'll need to add a solid surface for Flip to walk on.

If you want to replay your game, you can always refresh your browser window, and the game will restart.

---

---


---

---

---

## 36 - Ground Sprite

Go back to your layout and add a new object. This object will be a **Sprite** again, and name it **Ground**. When the cross-hairs appear, click near the bottom left corner of the layout.



---

---

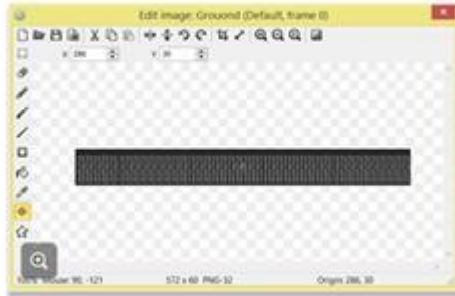
---

---

---

### 37 - Ground File

When the image editor appears, click the **Open** button and select the **Ground** file.



### 38 - Ground Image Points

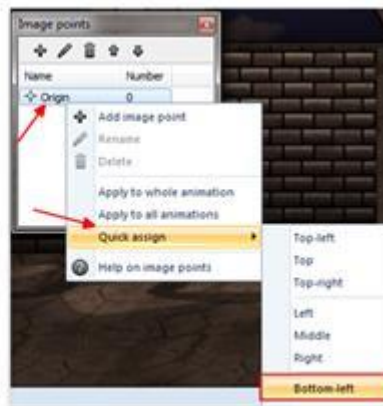
With the image inserted, you're now going to set the origin point for the object. The origin represents the point at which an object will rotate and also the point on the object where you set the position. You're going to be placing the Ground object at the bottom of the screen, so you'll want to set the origin to the bottom of the image.

If the Image points window is not visible, go into the image editor and click the **Image points** button. This is the cross-hairs in the toolbar, second from the bottom.



### 39 - Quick Assign Image Points

You'll see an Image points window appear. In the window, right-click on **Origin**, go to Quick assign, and when the list appears select **Bottom-left**.




## 40 - Ground Position

With the origin set, you can **Close** the image editor. Now, make sure the Ground object is selected on the layout. Go to the Properties Bar, and under Common, set its Position to (0, 720)

Common	
Layer	Main
Angle	0
Opacity	100
Position	0, 720

Next, you'll want to make the Ground object solid. This will accomplish keeping Flip on your Game layout. To do this, click the **Behaviors** link and click the **Plus** button to add a new behavior.



## 41 - Solid Behaviors

In the Add behavior window, select the **Solid** behavior and then click **Add**.



**Close** the Behaviors window, and run the layout to see that you can now use the arrow keys to move left and right and jump with Flip.

Don't forget to **save** your game; you wouldn't want to lose all your sweet stuff.

To learn more about the Solid Behavior, [Click Here](#)



## 42 - Success



**SUCCESS!**

You have just completed all the objectives in this presentation!