

1 - Title Slide: The Flip Intro Section 2

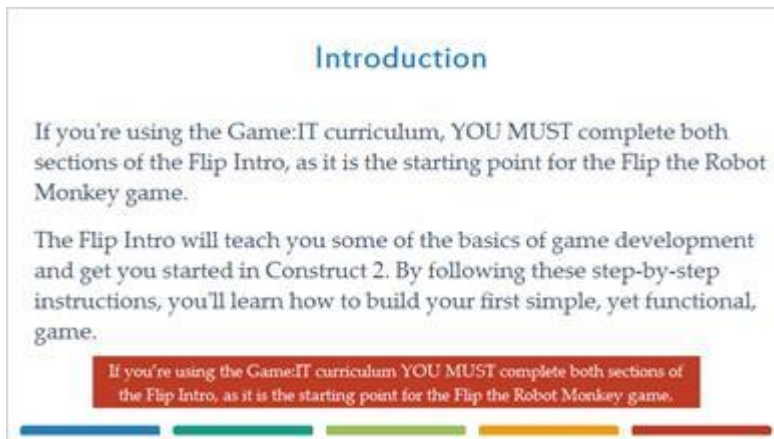


Game:IT
Unit 3

The Flip Introduction Section 2

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2 - Introduction



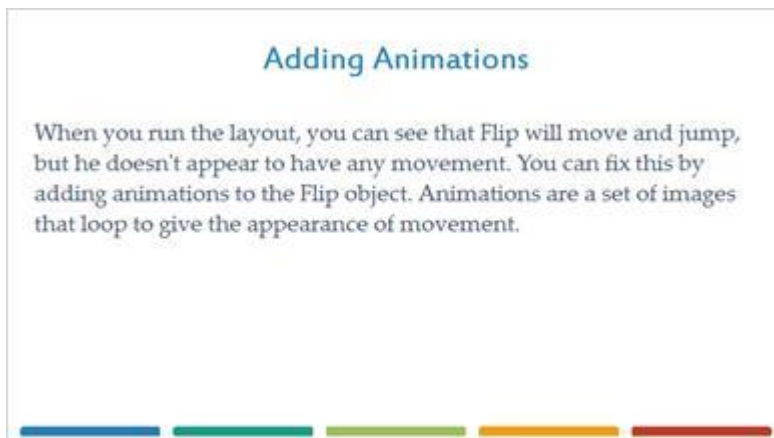
Introduction

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 - Adding Animations



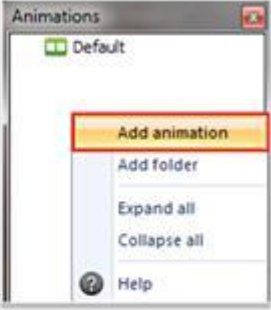
Adding Animations

When you run the layout, you can see that Flip will move and jump, but he doesn't appear to have any movement. You can fix this by adding animations to the Flip object. Animations are a set of images that loop to give the appearance of movement.

4 - Getting Started

In the Objects Bar, double-click the **Flip** object to open its image editor. Go to the Animations window, right-click, and select **Add animation**. When the animation is added, a text box appears. Change the name to **Walk**.

If you need the text box to reappear to change the name, right-click on the animation and select **rename**.



The screenshot shows a window titled 'Animations' with a 'Default' folder. A context menu is open over the folder, with 'Add animation' highlighted in yellow. Other menu items include 'Add folder', 'Expand all', 'Collapse all', and 'Help'.


5 - Walk Animation

Make sure you have the Walk animation selected, and you'll see a new empty canvas in the image editor. To add the images for the walking animation, you're going to use a sprite strip. Sprite strips are a single image file that contains all of the images needed for one animation.

6 - Import Frames from Sprite Strip

Go to the empty Animation frames window. Right-click, hover over **Import frames**, and select **From sprite strip...**. Select **FlipWalk** from the provided assets.

To learn more about Importing Sprite Strips, [Click Here](#)



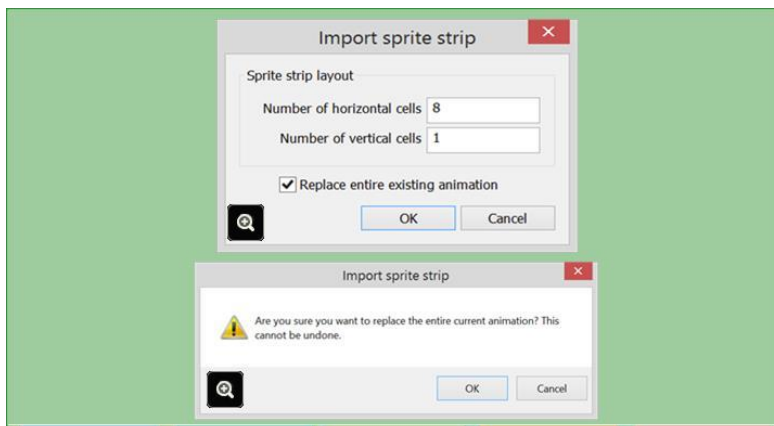
The screenshot shows a window titled 'Animation frames (1)' with a search icon in the bottom left. A context menu is open, showing options like 'Add frame', 'Duplicate last frame', 'Reverse frames', 'Import frames', 'Reload files from', and 'Thumbnail size'. The 'Import frames' option is highlighted, and a sub-menu is open showing 'From files...' and 'From sprite strip...'. The 'From sprite strip...' option is highlighted in red.

7 - Import Sprite Strip

When you add the sprite strip, you'll see the Import sprite strip window appear. Here, you'll tell Construct how the images are arranged on the sprite strip, and Construct will calculate the size and divide each image. Since all the images are on one line and there are eight images wide, you can set the Number of horizontal cells to 8 and keep the Number of vertical cells at 1.

Show Windows

Windows Images (Slide Layer)



8 - Animation Frames


Click **OK** and you'll see that you now have imported 8 frames that will make up the walking animation. You'll notice that you still have the first frame that is blank. To get rid of this, make sure it's selected and press the **Delete** key. Yours should look like this when finished.



9 - Looping

You'll now want to set the animation to loop. This will restart your animation once it reaches the last frame. Looping your animations can cut down on the number of frames needed to have an action like walking. To do this, click on **Walk** in the Animations window, and in the Properties Bar, set Loop to **Yes**.

Animation 'Walk' properties	
Speed	5
Loop	Yes
Repeat count	1
Repeat to	0
Ping-pong	No
More information	Help



10 - On Your Own

On Your Own

Complete all the tasks before continuing to the next slide

- ◆ Add a new animation named Jump.
- ◆ Import the sprite strip file named FlipJump that consists of 3 horizontal and 1 vertical cell.
- ◆ Remove the blank animation frame.




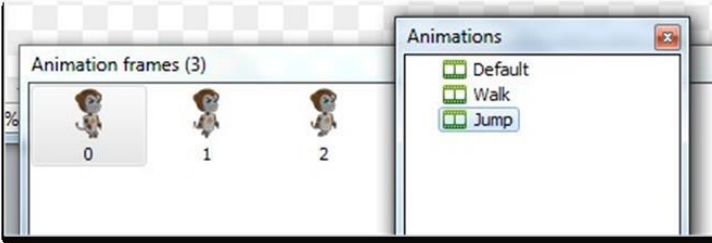
Show Finished Animation



Jump Animation (Slide Layer)

On Your Own

Complete all the tasks before continuing to the next slide



11 - Event Sheet 1

When you have the jump animation inserted, you can close the image editor. Next, you'll be adding the first event to your game. These events will indicate when you play each animation.

Go to your Event Sheet by clicking the [Event sheet 1](#) tab at the top of the layout.

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



12 - Adding Events

Before adding your first event, go over to the Projects bar on the right side, and right-click Event sheet 1 and rename it *esGame*. It's renamed this way because of the fact that it's an Event sheet (es) that the Game layout is using.

Add your first event by clicking the [Add event](#) link.

For your condition object, you'll want to select [Flip](#).



13 - Platform On Moved

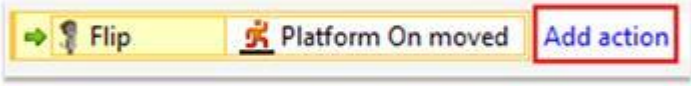
Now for the condition, select [On moved](#) from the Platform: Animation triggers section. This will set it so the event will fire when you move left or right.



14 - Adding an Action

With this event added, you're now ready to add an action to it. To do this, click the **Add action** link on the event.


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



The screenshot shows a horizontal bar with three items: a green arrow icon followed by the text 'Flip', a red icon of a person jumping followed by the text 'Platform On moved', and a blue button with the text 'Add action'. The 'Add action' button is enclosed in a red rectangular box.

15 - Flip Set Animation

Select **Flip** for the object, and for the action, select **Set animation**. This is found under the Animations section.




The screenshot shows a panel titled 'Animations' with several options: 'Set animation', 'Set speed', 'Stop', 'Set frame', and 'Start'. The 'Set animation' option is highlighted with a red rectangular box.

16 - Flip Set Animation

The Parameters window will appear. Here, you can indicate which animation you want to play. For this event, you'll want to set the Animation to "Walk". Keep the From value at "beginning" and then click **Done** to insert your action.

If you find that your actions are not firing as expected, double-check the spelling and capitalization in your events. Also, make sure you include the quotes (") around the "Walk" text.

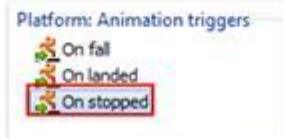


The screenshot shows a dialog box titled 'Parameters for Flip: Set animation'. It contains the text 'The name of the animation to set.' followed by two input fields. The first field is labeled 'Animation' and contains the text 'Walk'. The second field is labeled 'From' and contains the text 'beginning'. Both input fields are highlighted with red rectangular boxes.

17 - Flip On Stopped

When you run your layout, you'll see that when you move, your walking animation runs. But, there are still a few problems that need to be fixed. Depending on the direction Flip is trying to move, he needs to be able to face left or right. Flip also needs to return to a standing position when stopped.

Add a new event and select **Flip** as the object. For the condition, select **On stopped**. this is located in the Platform: Animation triggers section.



18 - Animation to Default

For this event, you'll want to set the animation to the default. To do this, add an action to the event that uses the **Flip** object and the **Set animation** action. For the animation, set it to "Default" and click **Done** to insert the action.

Next, you'll create a couple of events that will make sure Flip is facing the right direction when moving left or right. In order to do this, you'll need to add a new object type called Keyboard. This will give you access to make keyboard events and actions.



19 - Keyboard Object

Go to the Objects Bar, right-click on the blank white space, and select **Insert new object**. In the object type list, scroll down to the Input section and select the **Keyboard** object. Click **Insert** to add it to your game.


To learn more about the Keyboard Object, [Click Here](#)



20 - Keyboard Key Is Down

Now that the Keyboard object is in your project, add a new event. Use the **Keyboard** object, and for the condition, select **Key is down**.

In the Parameters window, press the **click to choose** button, and when the Choose a key window appears, press the **Right arrow** key. Click **OK** to close the window.




The image shows two screenshots. The top one is a menu for the 'Keyboard' object with 'Key is down' highlighted. The bottom one is a 'Choose a key' dialog box with 'Right arrow' selected in the 'Press a key:' field and 'OK' highlighted.

21 - Flip Set Mirrored

Click **Done** to insert your event. Add a new action to this event that uses the **Flip** object. For the action, select **Set mirrored**. This is found under the Appearance section.

“Set mirrored” will allow you to flip the image of your object horizontally. Since the images we inserted originally faced right, you’ll want to set the State to **Not mirrored**. Press **Done** to insert your action.



The image shows a screenshot of the 'Appearance' object menu with 'Set mirrored' highlighted.

22 - On Your Own

On Your Own

Complete all the tasks before continuing to the next slide

- ◆ Add a new event that uses the Keyboard object to check if the left arrow key is down.
- ◆ Add an action to this event that sets the Flip object to Mirrored.

Show the New Event



The image shows a thumbs up icon with the text 'IT'S YOUR TURN' and 'On Your Own'.

New Event Image (Slide Layer)

On Your Own

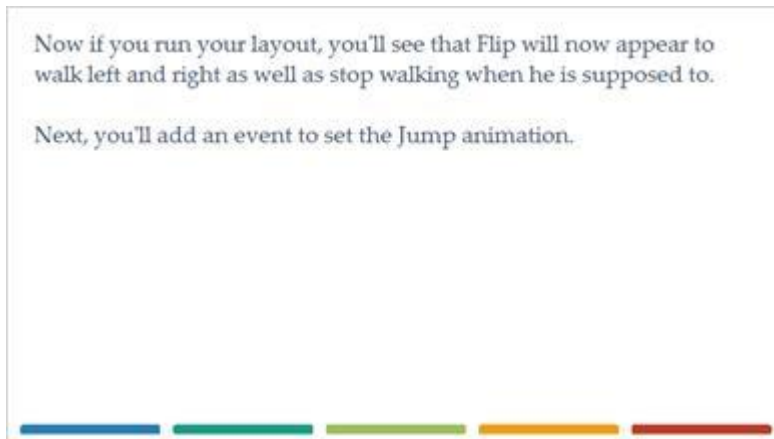
Complete all the tasks before continuing to the next slide



23 - Run The Layout

Now if you run your layout, you'll see that Flip will now appear to walk left and right as well as stop walking when he is supposed to.

Next, you'll add an event to set the Jump animation.

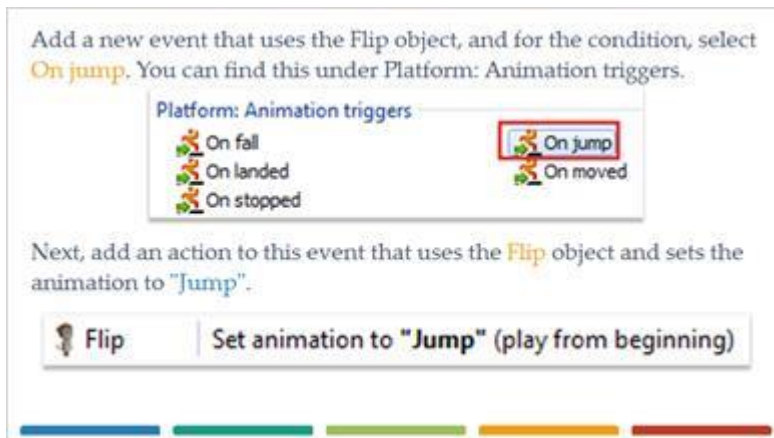
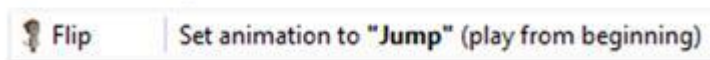


24 - Flip On Jump

Add a new event that uses the Flip object, and for the condition, select **On jump**. You can find this under Platform: Animation triggers.



Next, add an action to this event that uses the Flip object and sets the animation to "Jump".



25 - Sub-Events

If you run the layout and jump, you'll see that the jump animation will play but will have issues when Flip lands. You'll fix this by adding a new event and your first sub-event.

Sub-events allow you to have different events trigger off of parent events.

To learn more about Sub-events,

[Click Here](#)

26 - Flip Platform On Landed

To get a better understanding of sub-events, you're going to add one now. First, you'll add your parent event.

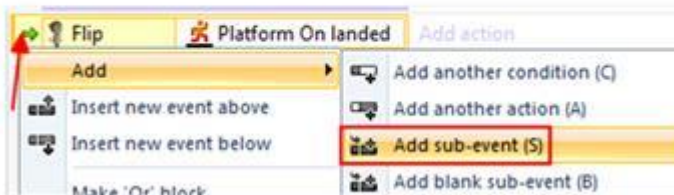
Add a new event that uses the **Flip** object and the **On landed** condition. You can find this condition under the Platform: Animation triggers.



27 - Adding a Sub-Event

To add a sub-event, **right-click** on the left side of the event (by the green arrow) and hover over **Add** and then select **Add sub-event**.

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



28 - Flip Platform Is Moving

You'll see that this will bring up the normal add event window. For this sub-event, select the **Flip** object, and for the condition, select **Is moving**. This is found under the Platform section.



29 - Inverting Conditions

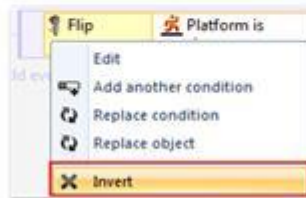
Your sub-event is now inserted. Now, you'll add another sub-event to the On landed event. This event will check if you are not moving. To do this, you'll use a new tool called Invert. Invert will add a red X in front of the event. This red X is adding the word **not** to the front of the event, making the event do the opposite. Start by **right-clicking** on the On landed event, go to **Add**, and then select Add **sub-event**.

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

30 - Inverting

For this event, you'll again select the **Flip** object and the **Is moving** condition.

With the sub-event added, right-click on it and then in the drop down, select **Invert**.



31 - Trigger Events

This group of events will trigger when Flip lands. If he is then moving, an action will fire, and if he's not moving, a different action will fire.

6	Flip	Platform On landed
7	Flip	Platform is moving
8	Flip	Platform is moving

32 - On Your Own

On Your Own

Complete all the tasks before continuing to the next slide

- ◆ Add an action to the is moving sub-event that sets Flips animation to Walk.
- ◆ Add an action to the inverted is moving sub-event that sets Flips animation to Default.

Show the New Event

Platform Event (Slide Layer)

On Your Own

Complete all the tasks before continuing to the next slide

Flip	Platform is moving	Flip	Set animation to "Walk" (play from beginning)
Flip	Platform is moving	Flip	Set animation to "Default" (play from beginning)

33 - Fall Animation

If you run the layout now, you'll see that when Flip jumps, lands, and begins moving, that the animations transition smoothly.

Next, you're going to add another animation for when Flip is falling.

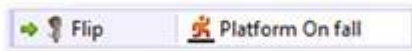
In your Object Bar, double-click **Flip** to bring up the image editor. Go to the Animations window and add a new animation. Give this animation the name of **Fall**.



34 - Flip Platform On Fall

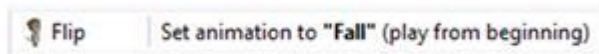
The Fall animation will consist of a single frame, so click the **Open** button in the image editor and select the **FlipFall** file. When the image has been imported, you can close the image editor.

In your event sheet, add a new event and select **Flip** as your object. For the condition, select **On fall** from the Platform: Animations triggers section.



35 - Flip Set Animation to Fall

Add a new action to the event you just created. Use the **Flip** object and the **Set animation** action. Set the Animation field to your newly created "Fall" animation and click **Done**.



36 - System Object

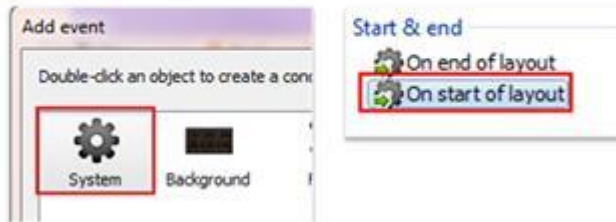
You'll now set a new event that will fire at the start of the layout. This event is helpful when you have actions that need to be performed before the user starts to play the game.

For this event, you'll use the System object for the first time. The System object represents built-in functionality in Construct. This object will be present in every project you create.

37 - System On Start Of Layout

Add a new event to your event sheet that uses the System object.

For the condition, scroll down to the Start & end section and select **On start of layout**.



38 - Set Animation to Default

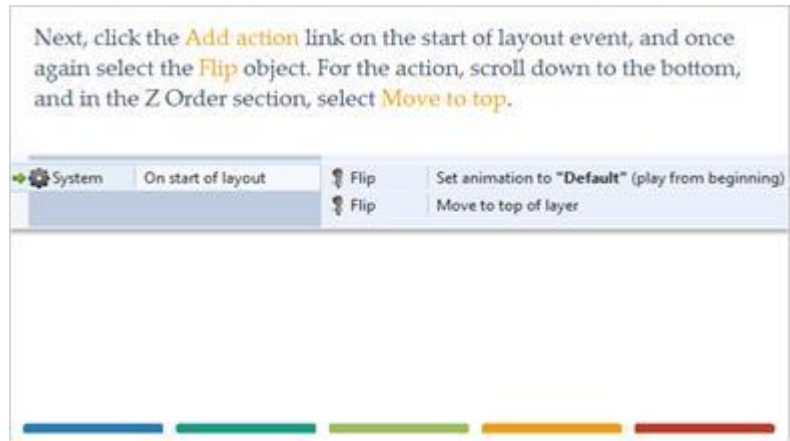
For this event, you'll add two separate actions. The first one will set Flips animation to Default, and the second will ensure that Flip appears in front of all other objects.

Add an action to the start of layout event that uses the Flip object and the Set animation action to set the animation to "Default".



39 - Flip Move to Top of Layer

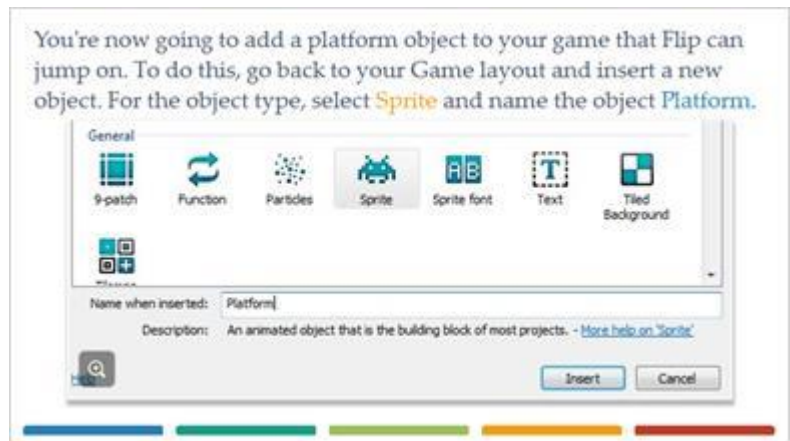
Next, click the **Add action** link on the start of layout event, and once again select the **Flip** object. For the action, scroll down to the bottom, and in the Z Order section, select **Move to top**.



System	On start of layout	Flip	Set animation to "Default" (play from beginning)
		Flip	Move to top of layer

40 - Platform Sprite

You're now going to add a platform object to your game that Flip can jump on. To do this, go back to your Game layout and insert a new object. For the object type, select **Sprite** and name the object **Platform**.



General

9-patch Function Particles **Sprite** Sprite font Text Tiled Background

Name when inserted: Platform

Description: An animated object that is the building block of most projects. - [More help on "Sprite"](#)

Insert Cancel

41 - Platform Image

Place this object somewhere in the Game layout. In the image editor, click the **Open** button, and in your files, select the **Platform** file. **Close** the image editor when you have imported the image.



42 - Adding the Solid Behavior

Like you did with the Ground object, you'll need to add a solid behavior to the Platform object. Make sure the Platform object is selected, and click the **Behaviors** link in the Properties bar. Click the **Plus** button, and select the **Solid** behavior to add it to the object.



43 - Running Your Game

Click and drag the platform object in the image editor to place it close to the ground, and then run the layout. Flip can now jump up onto the platform.

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



44 - Pro Tips

**PRO
TIPS**

We bet you didn't know that you can play this game, as well many other games, by visiting the STEM Fuse Arcade.

[Play Some Games!](#)

45 - Success

