

Brittany Morgan
Computer Science Educator
Milton High School

Scratch Lesson 1: Introducing Scratch and Creating Sprite

Have you heard of Scratch? No, not what you do to your itch, but Scratch from MIT the famous school for the curiously brainy people? If you have not heard, seen, or played with Scratch, then you've been missing out. Because it is a lot of FUN!!!

Step 1: What Can You Do with Scratch

Scratch is a programming language for all, even for kids. In fact, Scratch, unlike all other programming languages, is designed first and foremost for kids. Because it's designed for kids, it's very easy to learn and use. They can create animations like never before. For older kids or teens, they can create single-level or multi-levels Scratch games. But Scratch is not just for kids or teens. Teachers and adults can use Scratch to create effective education tools such as math quiz, physics simulation, and educational videos.

**Without further ado, let's start using
Scratch!**

Step 1: First Look at Scratch

<https://scratch.mit.edu/>

a. On the far right hand corner.. click Join Scratch! Its Free

The image shows the Scratch website homepage. At the top is a blue navigation bar with the Scratch logo, links for 'Create', 'Explore', 'Discuss', and 'Help', a search bar, and links for 'Join Scratch' and 'Sign in'. Below the navigation bar, the main heading reads 'Create stories, games, and animations' and 'Share with others around the world'. Three cartoon characters are featured: an orange cat with a 'TRY IT OUT' button, a blue character with a 'SEE EXAMPLES' button, and a yellow character with a 'JOIN SCRATCH (it's free)' button. To the right is a preview of a Scratch script: 'when green flag clicked', 'repeat 10', 'move 10 steps', 'change color effect by 25', 'play drum 4 for 0.2 beats', and 'say Welcome to Scratch! for 2 secs'. Below this, it says 'A creative learning community with 9,039,978 projects shared' and provides links for 'ABOUT SCRATCH | FOR EDUCATORS | FOR PARENTS'. At the bottom is a 'Featured Projects' section with five project thumbnails: 'Earth Day Game' by Bumblefly, 'How to Speak Pig Latin' by -TimeTravel-, 'Dwarf Mountainhome' by Kaide_, 'The Bauble Factory' by WoempaDooP, and 'Elementary Cellular Au...' by Wes64.

Create stories, games, and animations
Share with others around the world

TRY IT OUT
SEE EXAMPLES
JOIN SCRATCH (it's free)

A creative learning community with **9,039,978** projects shared

ABOUT SCRATCH | FOR EDUCATORS | FOR PARENTS

Featured Projects

- Earth Day Game by Bumblefly
- How to Speak Pig Latin by -TimeTravel-
- Dwarf Mountainhome by Kaide_
- The Bauble Factory by WoempaDooP
- Elementary Cellular Au... by Wes64

- b. *Click Join Scratch. Please use your school email and a username that is school appropriate. Follow the step by step directions till you are registered.*

Join Scratch x

It's easy (and free!) to sign up for a Scratch account.

Choose a Scratch Username

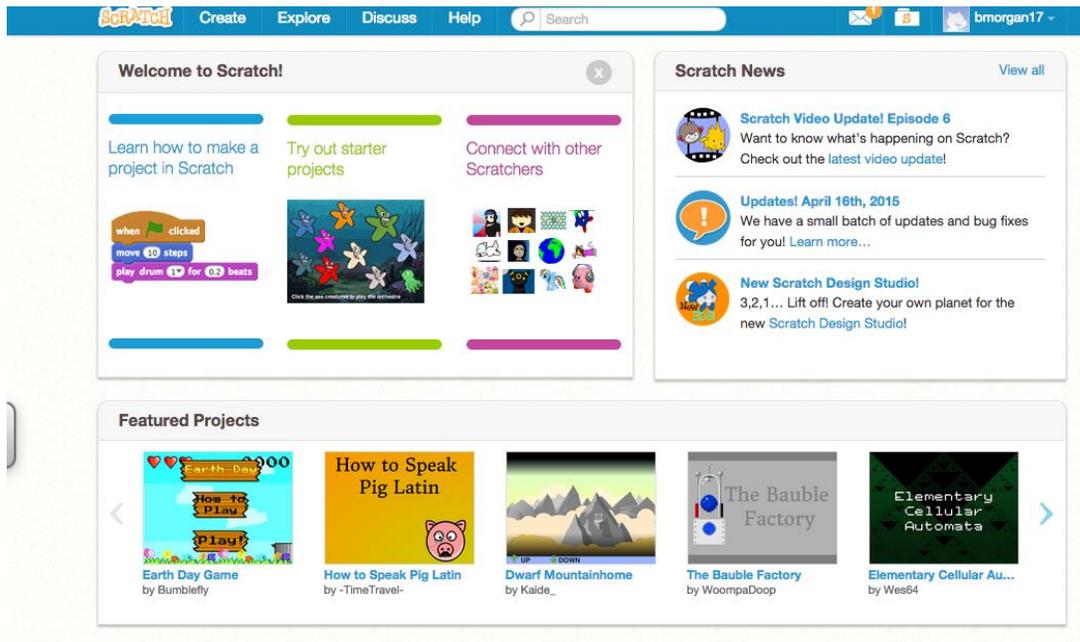
Choose a Password

Confirm Password



1 2 3 4  [Next](#)

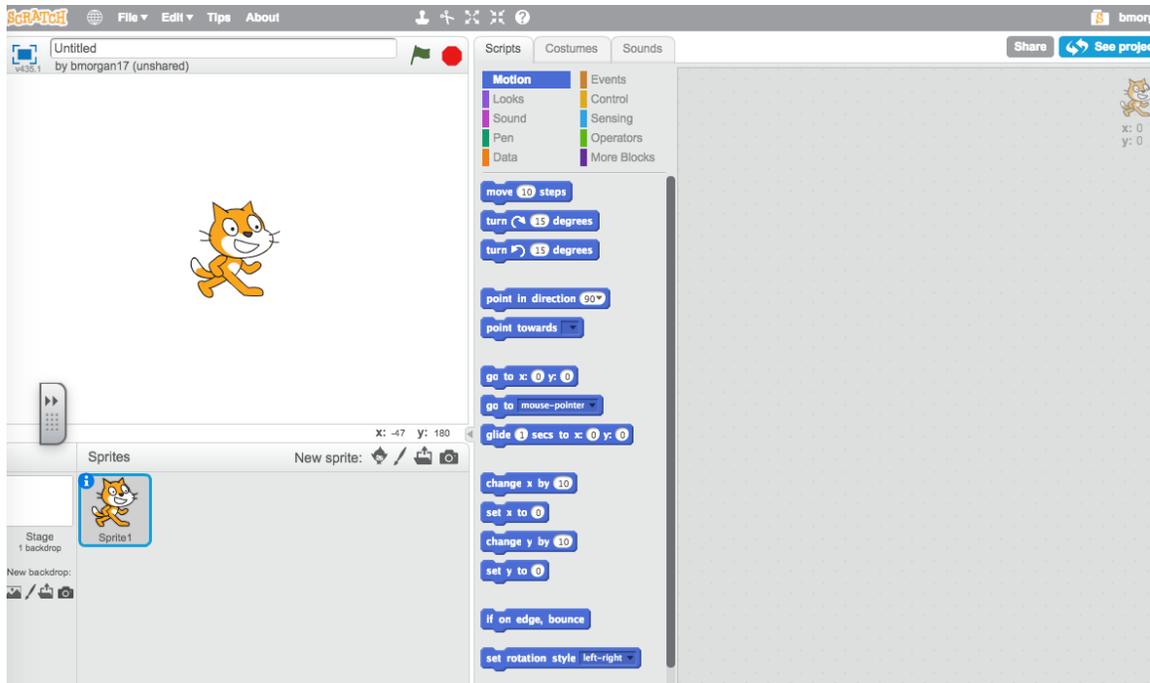
- c. Once you are signed into your account, your screen should look like the following:



The screenshot shows the Scratch website interface. At the top is a blue navigation bar with the Scratch logo, links for 'Create', 'Explore', 'Discuss', and 'Help', a search bar, and a user profile for 'bmorgan17'. Below the navigation bar are three main sections:

- Welcome to Scratch!**: A central area with three columns of content. The first column is titled 'Learn how to make a project in Scratch' and shows code blocks for 'when clicked', 'move 10 steps', and 'play drum for 10 beats'. The second column is 'Try out starter projects' with a grid of colorful project thumbnails. The third column is 'Connect with other Scratchers' with a grid of user avatars.
- Scratch News**: A sidebar on the right with a 'View all' link. It contains three news items: 'Scratch Video Update! Episode 6', 'Updates! April 16th, 2015', and 'New Scratch Design Studio!'. Each item has a small icon and a brief description.
- Featured Projects**: A horizontal carousel at the bottom showing five project thumbnails with titles and author names: 'Earth Day Game' by Bumblefly, 'How to Speak Pig Latin' by -TimeTravel-, 'Dwarf Mountainhome' by Kaide_, 'The Bauble Factory' by WoompaDooop, and 'Elementary Cellular Au...' by Wes64.

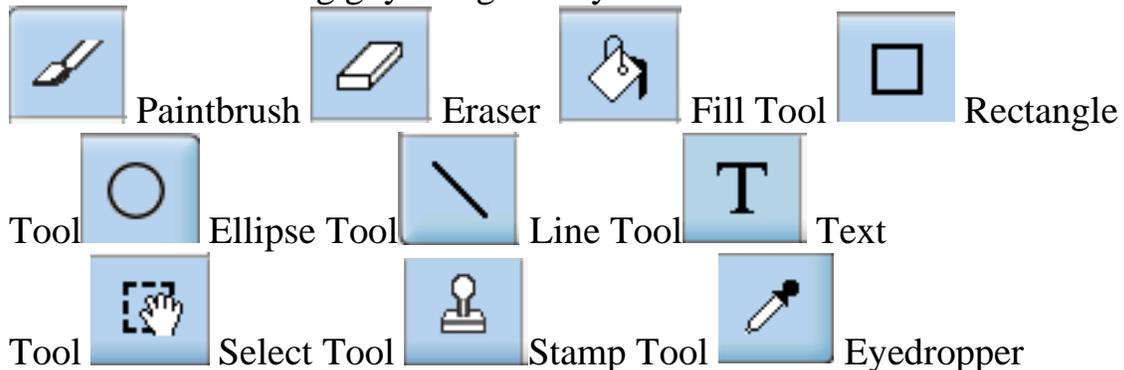
d. You will be creating your own Sprite now. A sprite is not like the soda you drink, but the character animation. Click **Create on the far left hand corner**. You should get a screen that looks like the image below:



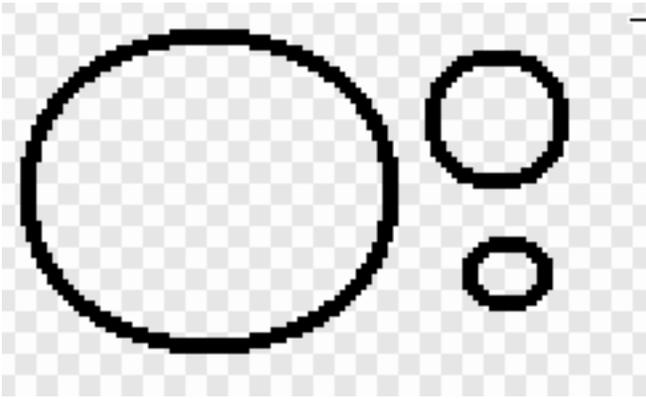
Now here comes the fun part!

Step 2: Create Your First Sprite

Click the  ("Create new sprite" button) to open the Paint Editor. I created the following guy using mostly

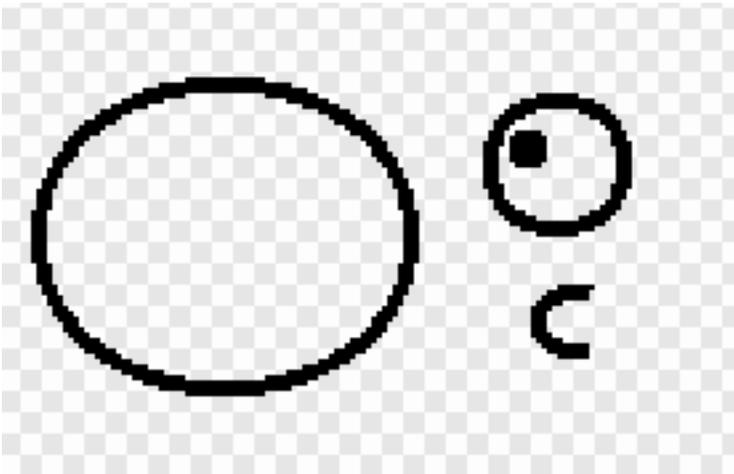


Click Ellipse Tool () and click hollow mode ( ). Draw three circles.



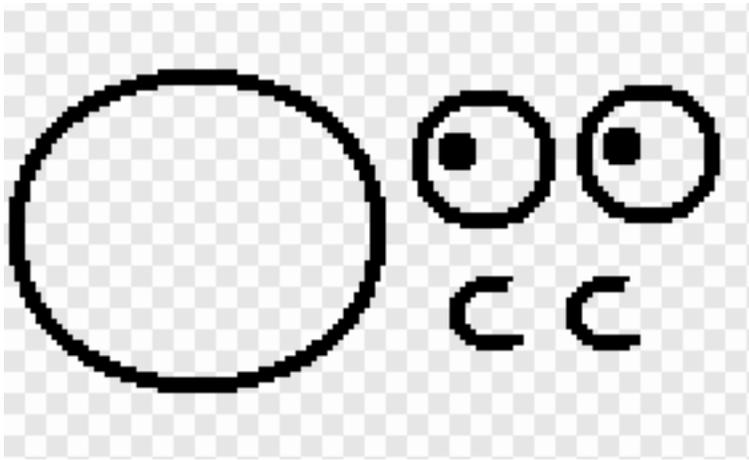
Click Ellipse Tool () and click solid mode ( ); draw a little dark solid circle

inside the medium circle, which will be the eye. Use Eraser tool () to trim the smallest circle; this will be the ear.

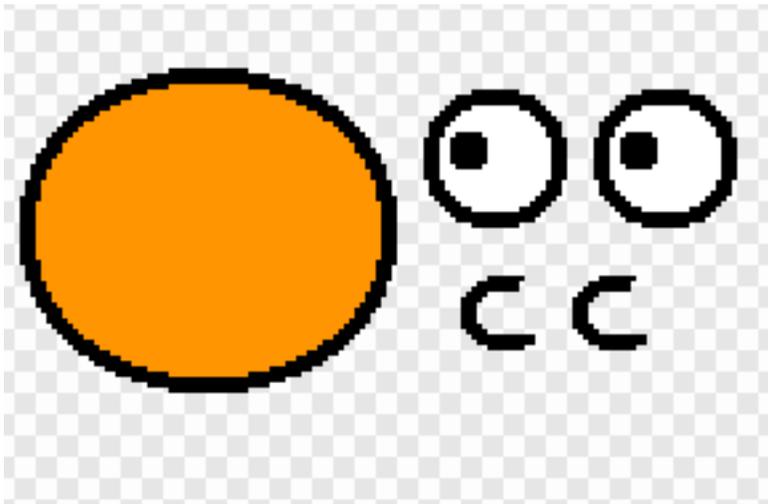




Click Stamp Tool () button and select the eyeball to copy. Drag the eyeball copy to where you want the new eyeball to be. Do the same for the ear to make two ears.



Use Fill Tool () to fill the face and the eye ball.



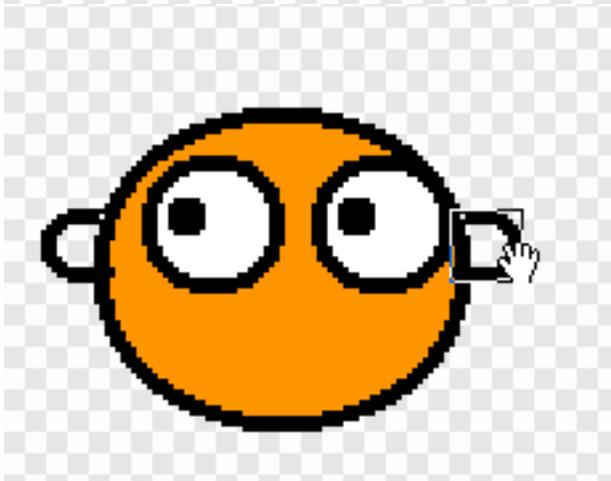
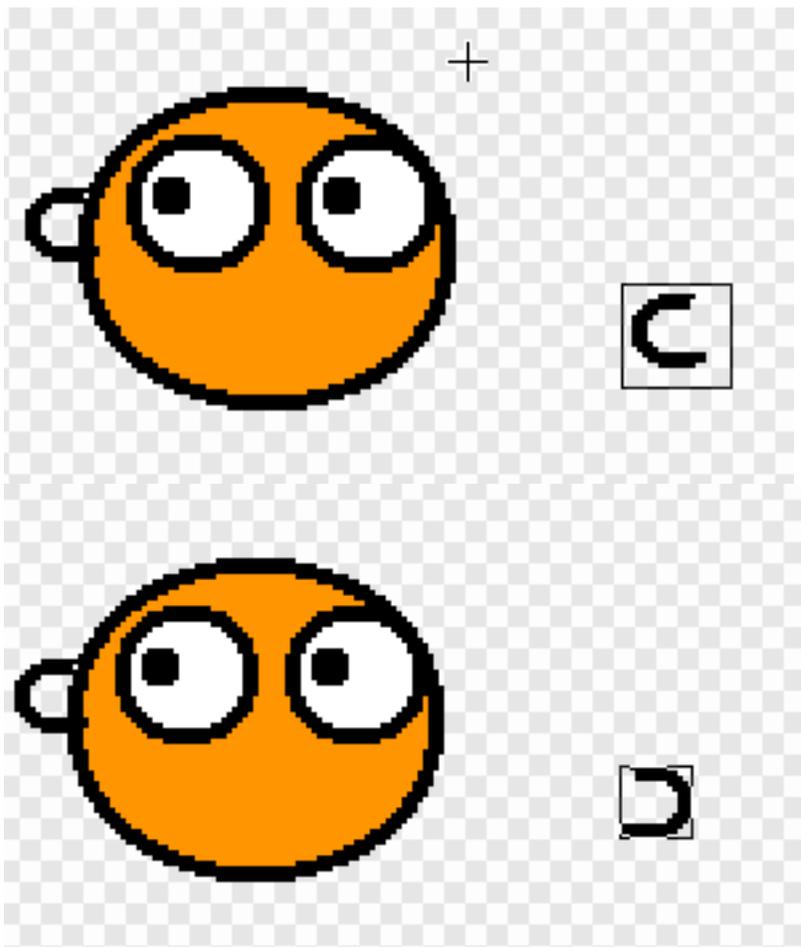
Click Select Tool () button and select both eyes; move them to the face.



Click Select Tool () button and select left ear; drag it to its place.



Click Select Tool () button and select the right ear; click  to flip it. Then drag the right ear to its place.



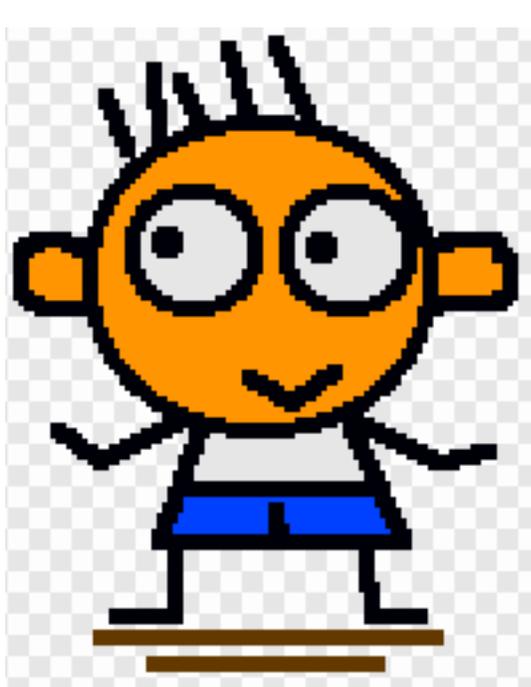
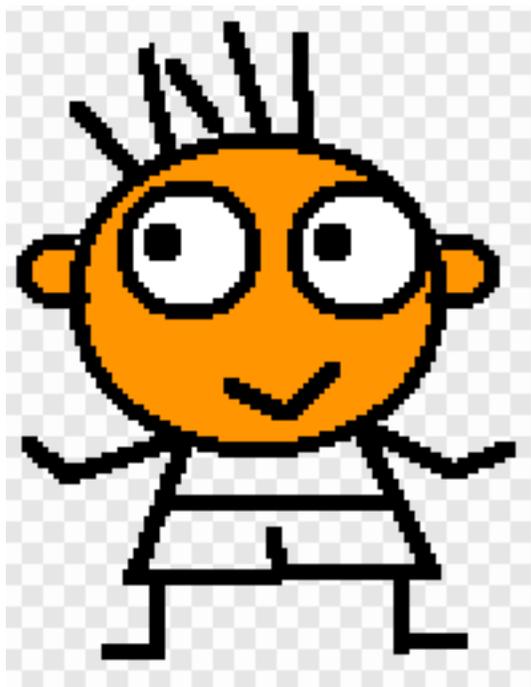
Click Eyedropper Tool () and click the face to copy the face color.

Click Fill Tool () and fill both ears with the face color.



Use Line Tool () to add hair, body, arms, legs, and cloth. Fill in

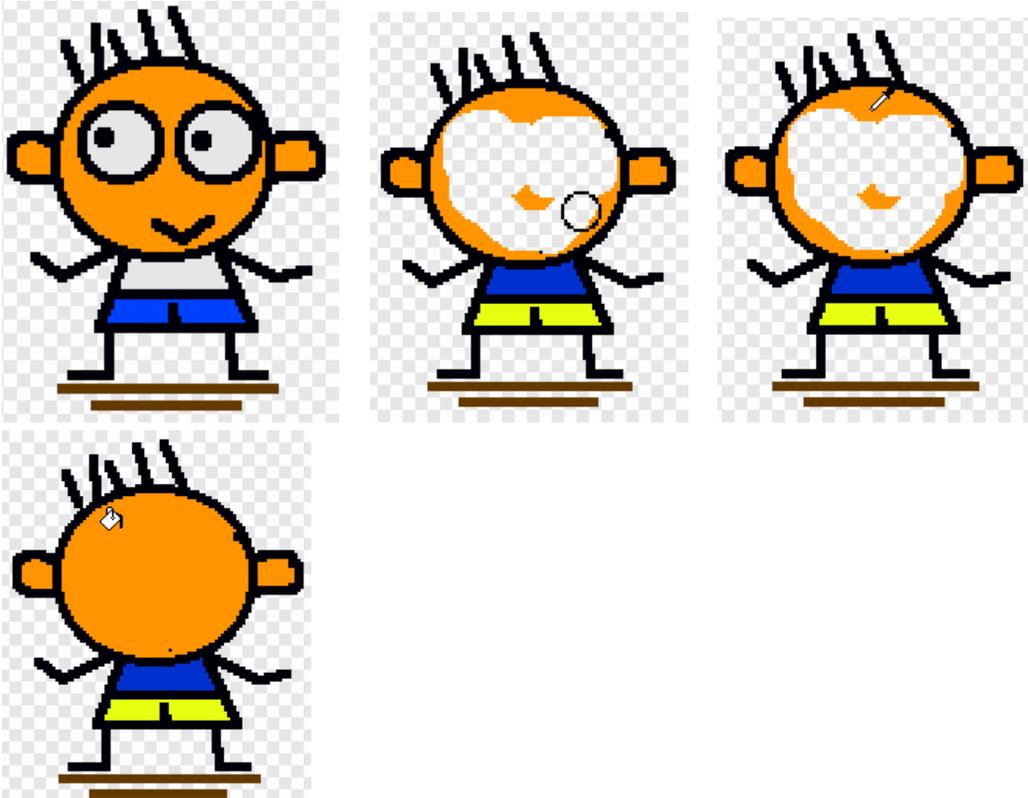
color with Fill Tool ().



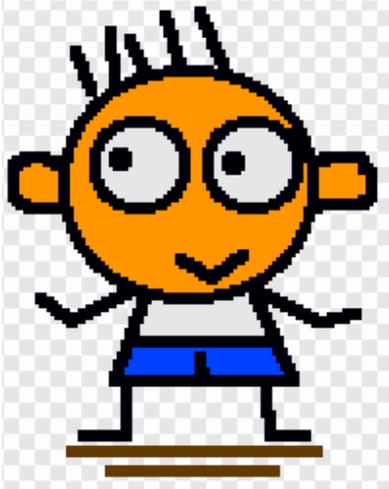
Once you are happy with your own Virtual Me, click OK to save. Rename the costume to “front”. This is the front view.

STEP 3 CREATE BACK, LEFT SIDE, and RIGHT SIDE VIEWS

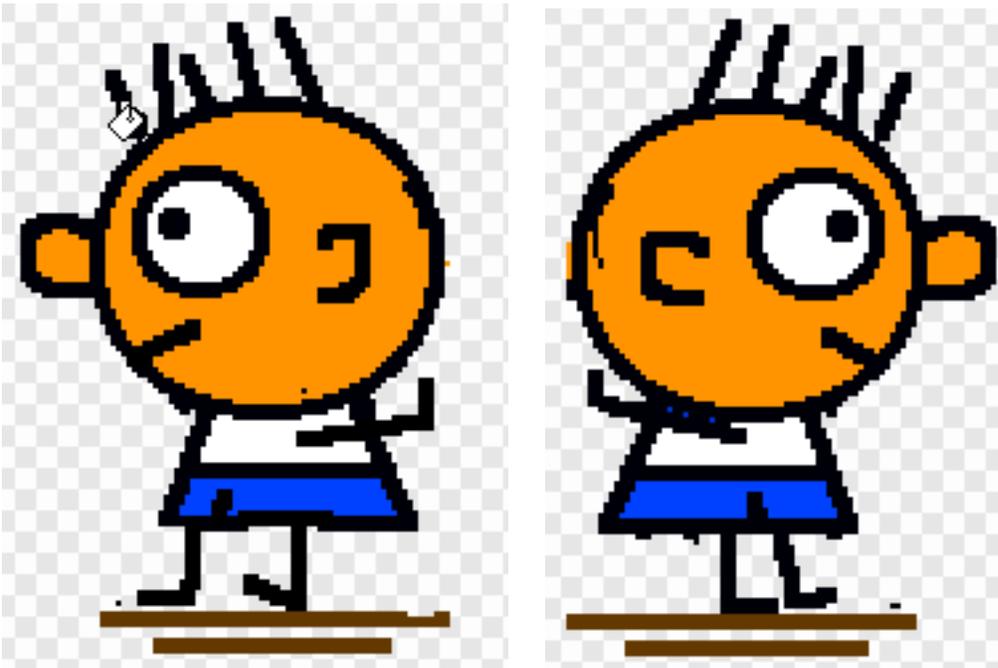
To create back view, make a copy of costume “front” (click “Copy” button next to costume “front”). Use Erase tool to erase eyes and mouth. Use Eyedropper tool to copy the face color. Then use Fill Tool to paste the color in the empty area. Click OK to save. Rename this costume as “back”.



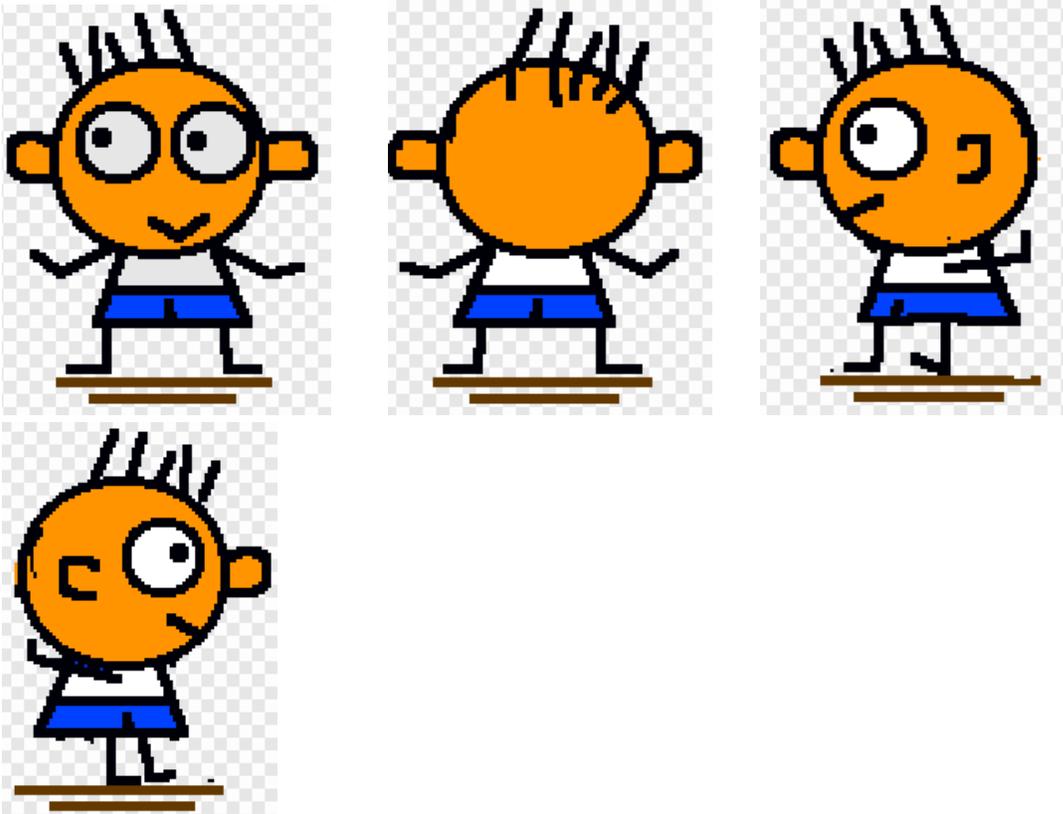
Then copy the costume “back”. Erase extra body parts. Redraw body parts. Refill color of the face and the pant using Eyedropper Tool and Fill Tool. Click OK to save and rename this costume as “facing left”



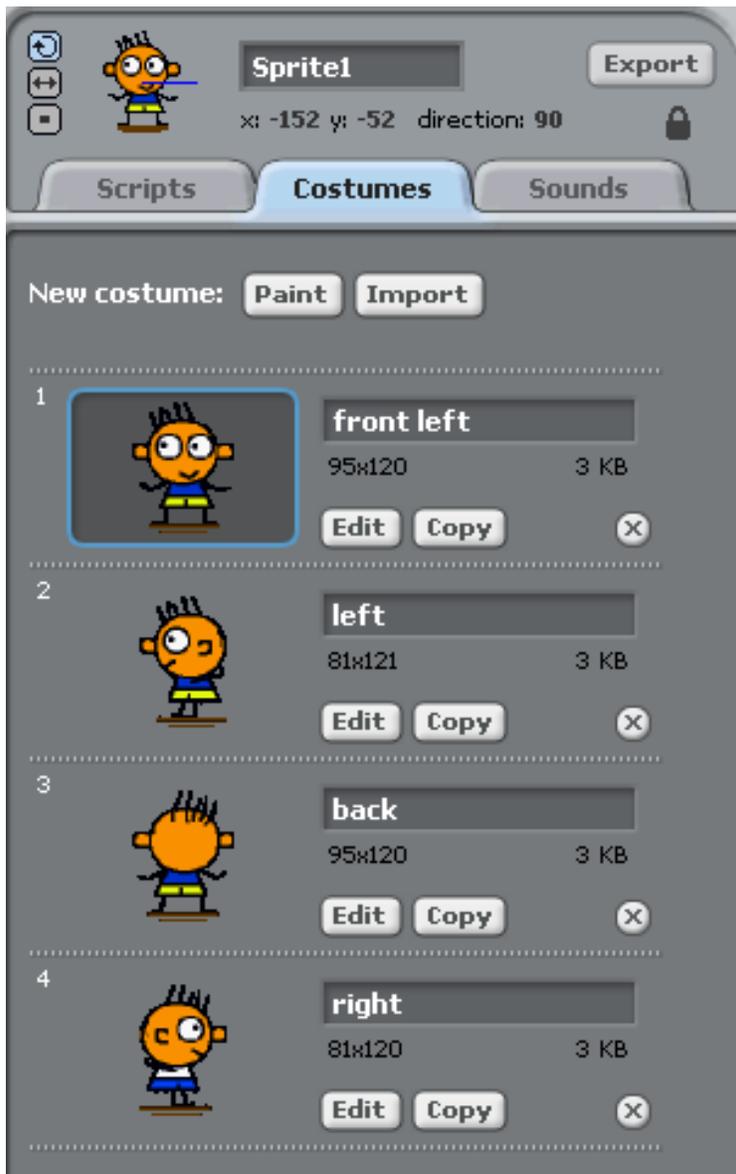
Copy the costume “facing left” and click  to flip the figure horizontally. Click OK to save and rename the costume as “facing right”.



We've just created four costumes for the same sprite: "front", "back", "facing right" and "facing left".



Your Sprite Editor should look like this:



Click Save button and, at the bottom of the “Save Project” window, enter “dance” as file name. Then click OK.

