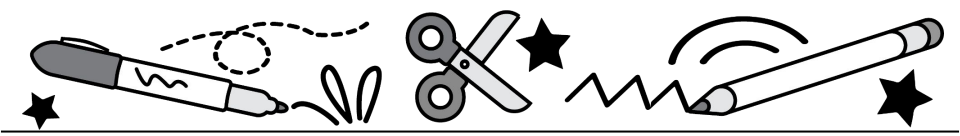
Create a Sprite

Explore digital drawing, remixing, or uploading to create original sprites



Cards in This Pack

- Design Your Sprite
- Using the Paint Editor
- Options to Customize Sprites
- Create a Sprite by Remixing
- Bring Your Drawings into Scratch
- Animate Your Sprite
- Code the Sprite
- Create an Asset Pack
- Collaborate: Export or Backpack / Collaborate: Remix

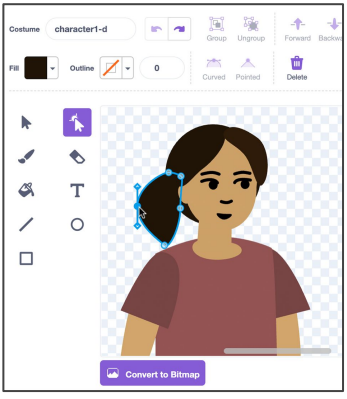
Design Your Sprite

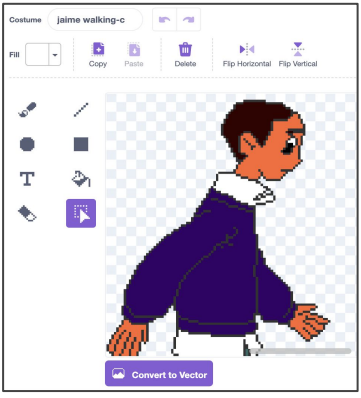
What sprite do you want to create? When you are brainstorming ideas, ask yourself:

- What items are unique to your culture, community, language, or location that would be fun to animate in Scratch or share with your peers?
- What is your favorite activity or hobby? Food? Native animal or family pet? Native plant? Item of dress? Book character?
- Is there already a sprite in the library that you'd want to remix or change?

Sprite examples by pondermake, SaffronChai, Chumie, algorithmar, and watse166.

Design Your Sprite

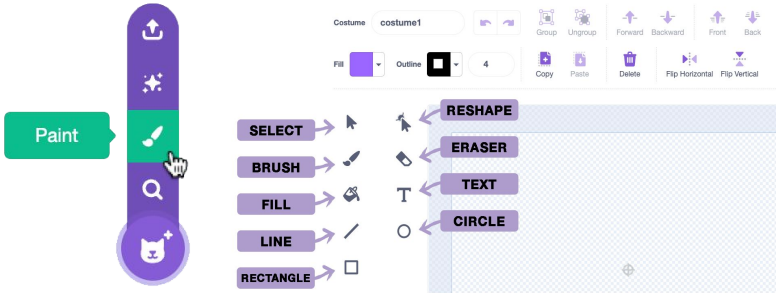




- There are two modes for using the Paint Editor in Scratch:
    - Vector-mode allows you to create and edit shapes (Scratch default).
    - Bitmap-mode allows you to edit photos and paint with pixels.
- We recommend using vector-mode, when drawing sprites, as it allows other users to make adjustments and add and remove elements if they remix your creations.

Using the Paint Editor

TOOLS TO TRY



	Click and drag with the Line, Circle, or Rectangle tools to **create a shape**. Hold down the Shift key while dragging to create equal sides, or 45 and 90 degree angles with lines.
	Using the Select tool, select a shape and click and drag one of the corner points to **resize** it.
	To **rotate** a shape once you've made it, use the Select tool to grab the anchor under the shape and drag it. Hold down the Shift key while dragging to rotate at 45 degree angles.
	Using the Reshape tool, click on one of the points of a shape and **move the point** around to alter the shape. Click + Shift key to select and move multiple points at once.
	Using the Reshape tool, click on a part of the shape that doesn't have a point to **add a new point**, or click on a point and press "Delete" to **remove a point**.

Using the Paint Editor

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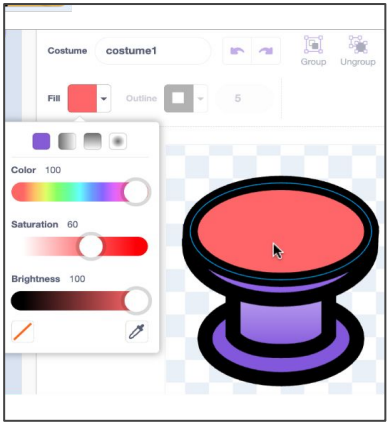
	Using the Reshape tool, click on a point and choose whether it is **curved or pointed**. Click on a point and drag rotate the handles attached to the point to **alter the shape of a curve**.
	Using the Select tool, select a shape and click the buttons on the top menu to **copy and paste** a duplicate.
	Using the Select tool, select a shape and click the flip horizontal or flip vertical buttons on the top menu to **flip** a shape.
	Using the Select tool, select a shape and click the Forward, Backward, Front, or Back buttons to change the **layer order.**
 	Select the fill from the dropdown and use the fill (paint bucket) tool to adjust a shape's color. Or using the Select tool, select a shape and then use the Fill and Outline dropdowns to adjust the **color, saturation, brightness, and outline**. You can also choose to use a **gradient**. Use the eyedropper to select a color from another shape. Use the red strikethrough to fill with no color.
	Using the select tool and holding down the "Shift" key, select multiple shapes to **group** them (helpful to move several shapes together).
	Use the brush tool for **freehand line drawing**. The example to the right shows hand drawn whiskers.
	Use the **eraser** tool to remove parts of the drawing from *all* shapes and layers it comes into contact with when clicking and dragging. You can use the reshape tool to then adjust the new points created.
	The **text** tool comes with a dropdown list of font options to choose from, and Fill and Outline dropdowns to change text color and outline.

Options to Customize Sprites



- Let's explore different ways to rotate sprites, change their size, change their color or brightness, etc.
- We can adjust the look of sprite costumes using the Paint Editor tools.
- Or we can adjust sprites using code blocks.

Options to Customize Sprites

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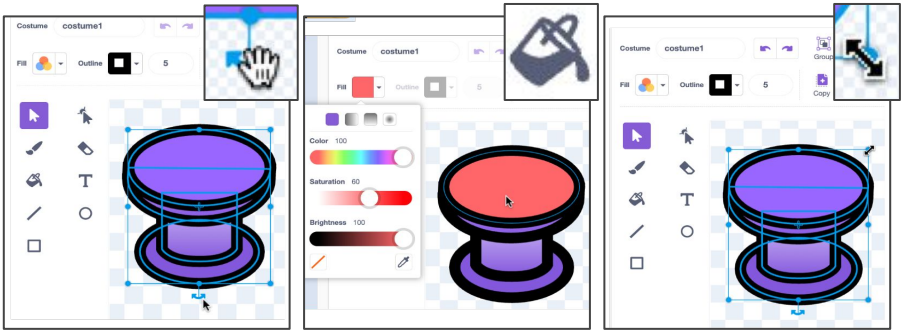
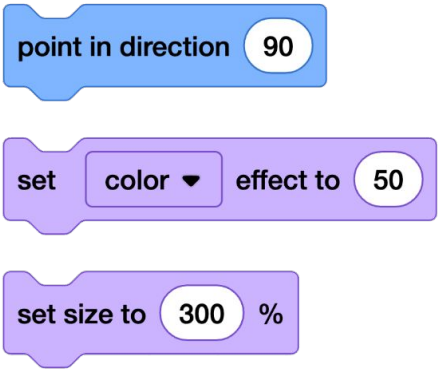
EDIT THE COSTUME IN THE PAINT EDITOR



Rotate with Select Recolor with Fill Resize with Select

ADJUST THE SPRITE WITH CODE



Experiment!

Do you notice any differences between using these code blocks to adjust a sprite versus using the Paint Editor tools above?

What happens if you use both methods?

Create a Sprite by Remixing

- Remixing parts of existing sprites could make creating a new unique sprite faster and easier.
- The sprite library contains a mix of bitmap and vector sprites. You can remix and re-imaging either type of sprite, but for this exercise, we are going to focus on vector sprites because they are easier to edit and customize, mix and match.

Sprite remix examples by algorithmar, bgordi0077, RealAimkidBunni, and Chumie.

Create a Sprite by Remixing

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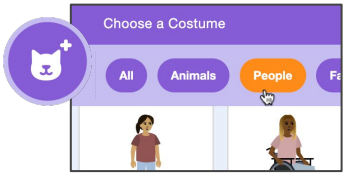
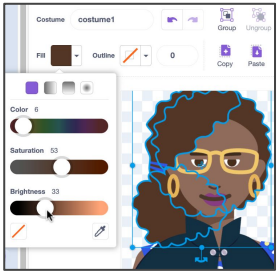
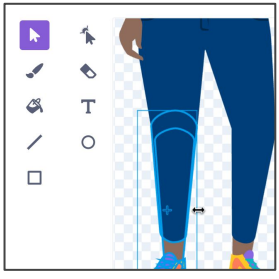
Choose two or more vector sprites with elements you like. Remember, some sprites have multiple costumes with elements/poses.

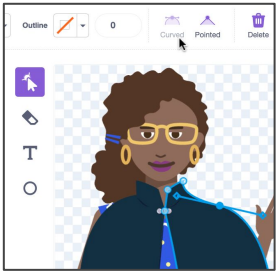




Recolor with Fill

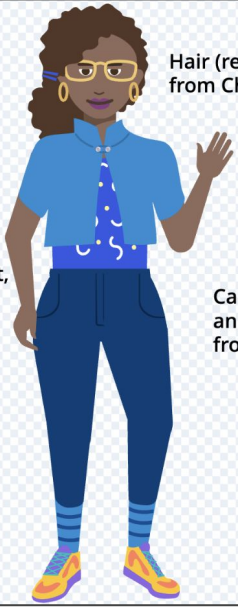


Resize with Select



Use Reshape

Main Body from Luca-b
- changed skin color
- adjusted body shape, pants height, and hairclip angle
- recolored pants and hair clip
- removed belt



Hair (recolored) and earrings from Character1-m

Glasses and mouth (recolored) from Character2-a

Cape (recolored and reshapped) and striped socks (recolored) from Witch-a

Bring Your Drawings into Scratch

You can upload an original hand-drawn image or photograph to create a sprite. Keep in mind:

- You can choose a JPG, PNG, or SVG file.
- Keep each of your files under 10MB.
- Do not upload materials under copyright.
- Be sure that your upload follows the Community Guidelines and does not reveal personal information (like a photo with your face).

Sprite example drawings by algorithmar's two daughters.

Bring Your Drawings In

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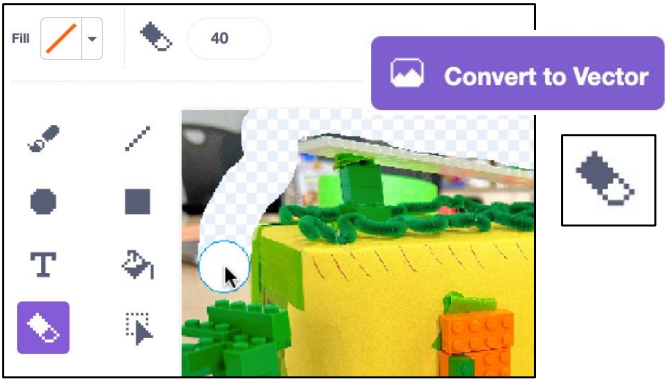
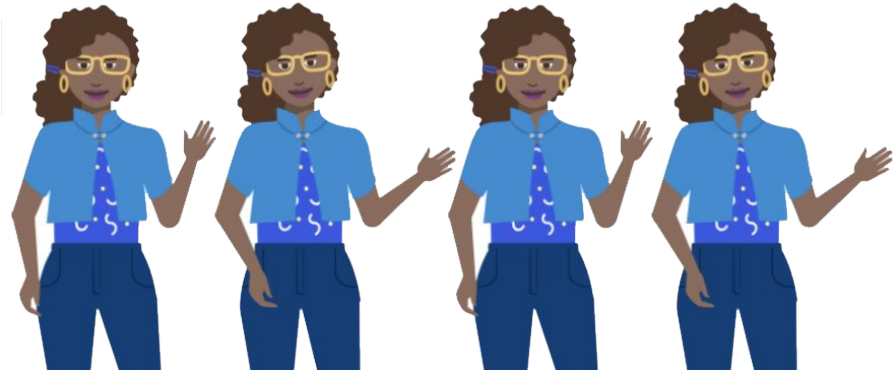


Options to Remove the Background:

- Before you upload the file, use **online tools or software**
- Use the **tools in the Scratch Paint Editor** after a file has been uploaded
    - In bitmap-mode, use the eraser tool to remove the image background or other pieces you don't want from your image.
    - You'll know you are in bitmap-mode when you see the "Convert to Vector" button at the bottom of the screen.
- You can choose to convert it to vector when done using the "Convert to vector" button to more easily rotate or resize, if desired.

Animate Your Sprite



There are many ways you might choose to animate your character. For instance:

- Try moving or gliding your character to a new location.
- Try changing the direction of the character to tilt back and forth.
- Or try adding additional costume drawings to change the position of certain elements and create movement as costumes are changed. Flip this card over for more.

Animate Your Sprite

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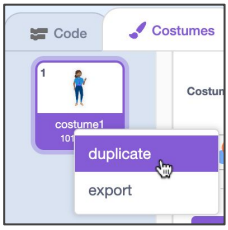
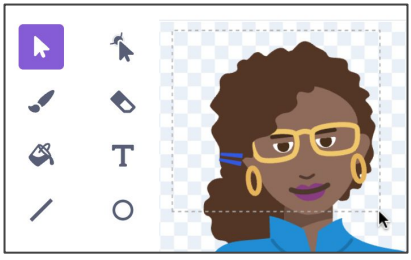
GET READY

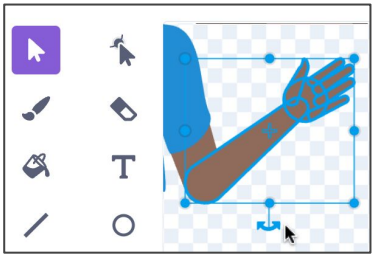
Duplicate your sprite costume on the costume tab. (Right click, Duplicate.)



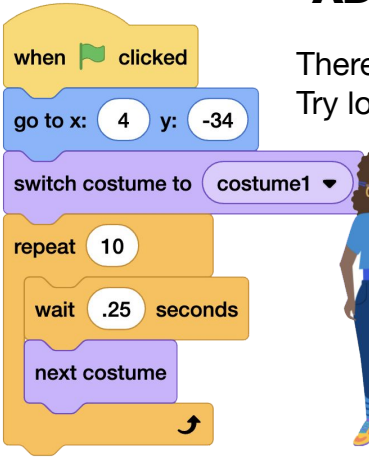
Use the select tool, then click and drag on the canvas to select multiple items.

Try rotating and moving incrementally.

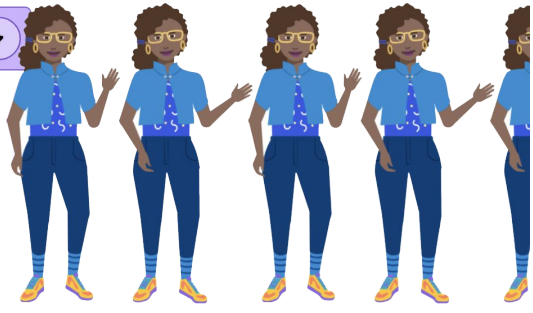




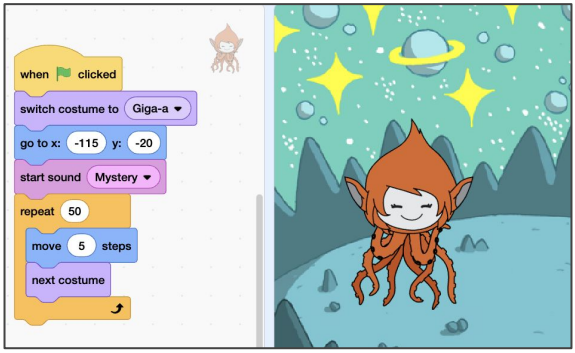
ADD CODE



There are many ways to animate. Try looping through the costumes.



Code Your Sprite



Click the Code tab, then try adding a few blocks! A great place to find tips for getting started, tutorials, Scratch Coding Cards, and more is the Scratch Ideas page (scratch.mit.edu/ideas). Try:

- using blocks to hear or see what you want to say on the stage
- adding text or custom backgrounds
- using motion blocks to give the sprite movement
- using event blocks (like “broadcast” or “when clicked”) to trigger action or make the project interactive.

Code Your Sprite

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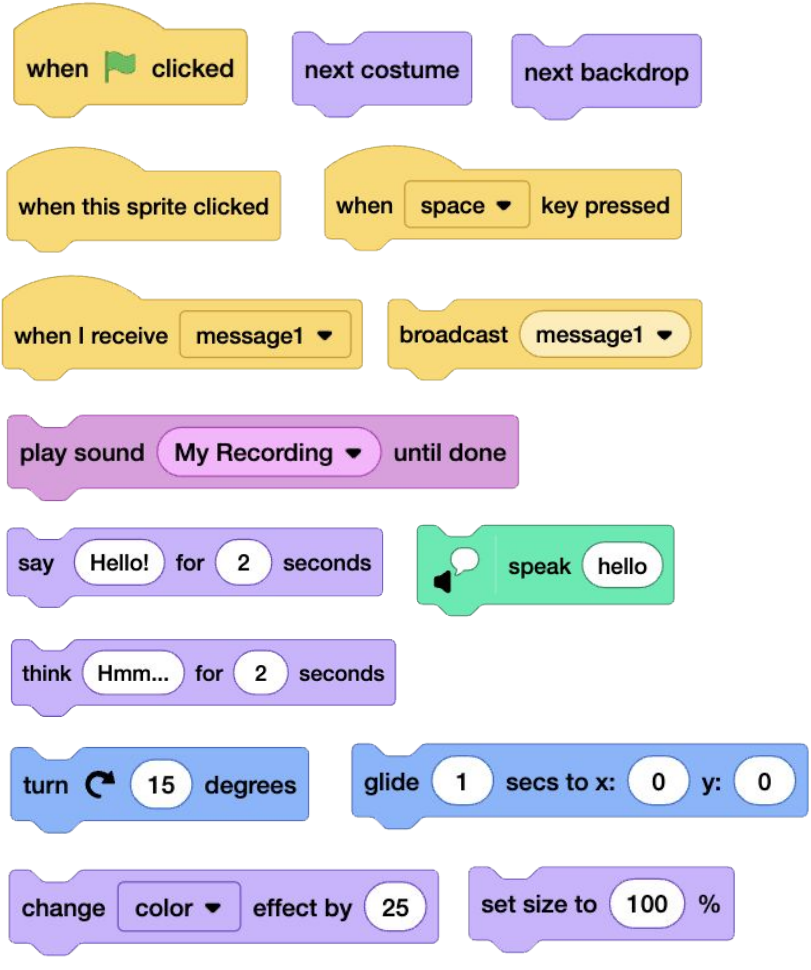
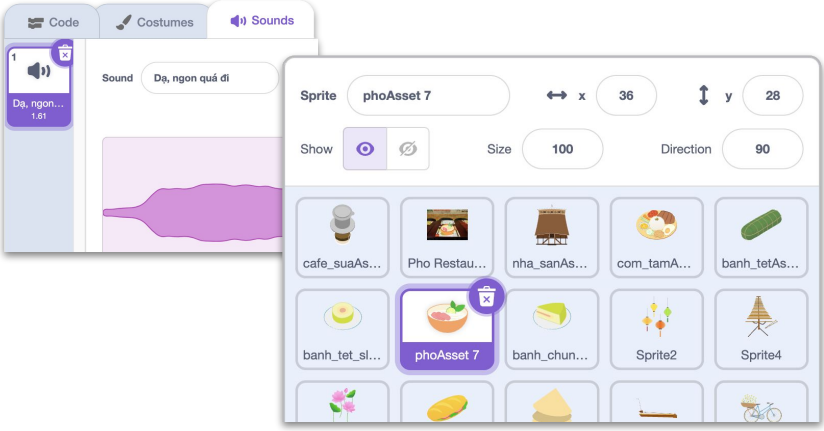
BLOCKS TO TRY



Create an Asset Pack

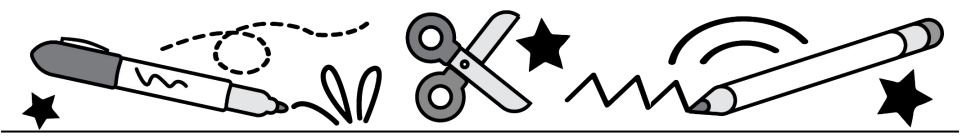


Assets, in Scratch, can include:

- sprites
- costumes
- sounds
- backdrops
- code snippets

An **asset pack** is a collection of assets related to a specific theme, project type, cultural event, cultural symbols or customs, geographical region, or idea.

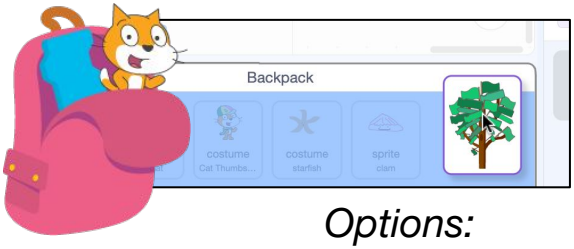
Asset Pack example made by STEAM for Vietnam.

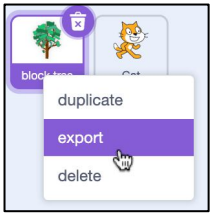


Create an Asset Pack

- **Name your sprite** and costumes with something descriptive.
- Consider creating **multiple costumes** for your sprite to show animation or variation.
- Consider adding at least one **related sound** for each sprite you create. Upload a sound or create an original sound by recording yourself, or noises in your environment.
- When creating an asset pack to share, we recommend creating your **backdrop as a sprite** instead, for easy backpacking or exporting.
- If you did not make a sound or an image yourself or you remixed someone else's creation, it is important to **provide credit** in the Notes and Credits section.

Collaborate: Export or Backpack

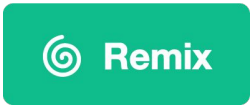




Options:

- **Export a sprite, costume, or sound:** Right-click the asset. Choose “export.” To add the asset to a project, choose the **upload** option in the sprite, costume, or sound menu to upload from your files.
- **Backpack a sprite, costume, or sound:** You must be logged in to access the backpack at the bottom of the editor screen. Click it to open the backpack and drag-and-drop a sprite, costume, or sound inside. To add the asset to a different project, open the backpack and drag-and-drop the asset into the sprite, costume, or sound area.

Collaborate: Remix



Scratch embraces remix culture. Remixing is when you build upon someone else's projects, code, ideas, images, or anything else shared on Scratch to make your own unique creation.

When remixing an asset, **make changes** like:

- adding code to animate the asset
- placing it in a new scene with other assets or add related sounds
- using the tools in the paint or sound editor to make adjustments to it
- adding additional elements you felt were missing

Just make sure that you **give credit** to whomever created the original asset in the Notes and Credits section.