

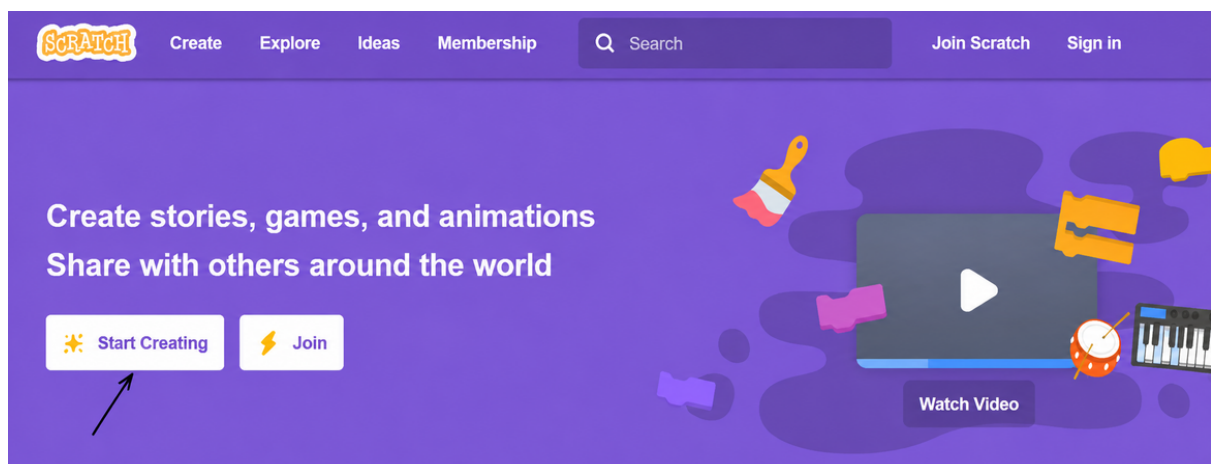
Introduction to the Scratch Interface

A beginner's guide to creating projects with Scratch's visual programming environment:

What is Scratch?

Scratch is a free, visual programming language designed to let you build games, animations, and interactive stories by snapping together colorful blocks of code instead of typing lines of text.

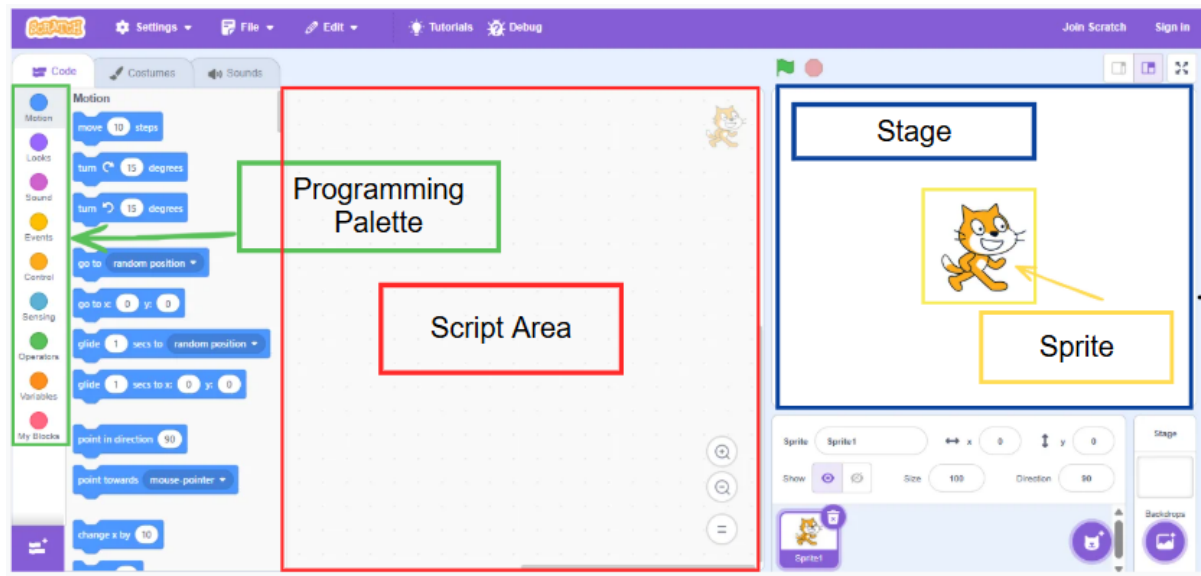
To create a project on Scratch, click on Start Creating.



Touring the Scratch Editor

When you click Create, the editor opens in four main areas:

1. Programming Palette
2. Sprite
3. Stage
4. Script Area



1. Programming Palette

The Programming Palette contains **all the instructions (blocks)** available for you to use. This is where you go to find the building blocks for your code.

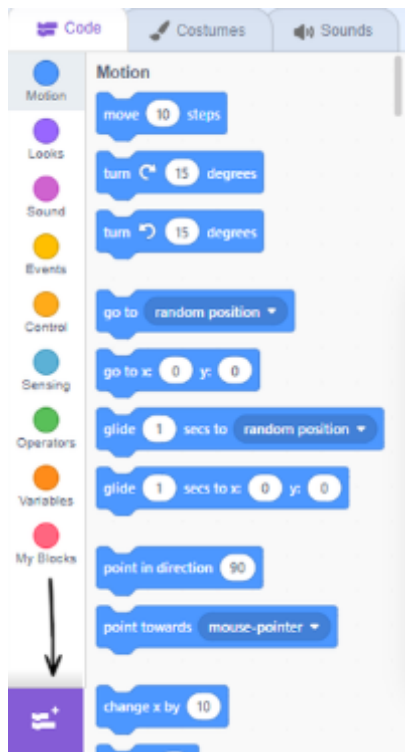
Block Categories

The Programming Palette is divided into **nine color-coded block categories**. You do not need to memorize all the blocks before starting, you will pick them up naturally as they build projects.

1 Motion Move, turn, glide, position	2 Looks Costumes, speech, size, effects	3 Sound Play, stop, volume, pitch
4 Events Trigger on flag, key, click	5 Control Loops, if/else, wait, clone	6 Sensing Touch, mouse, keyboard
7 Operators Maths, compare, text, logic	8 Variables Store & track data	9 My Blocks Custom reusable blocks

Extensions

At the very bottom of the Programming Palette you will find the Add Extension button. Clicking it opens a library of 11 extra block packs, such as Music (play notes and drums), Pen (draw on screen), Text to Speech, Video Sensing, and more. These extend what Scratch can do beyond the default blocks.



2. Sprite

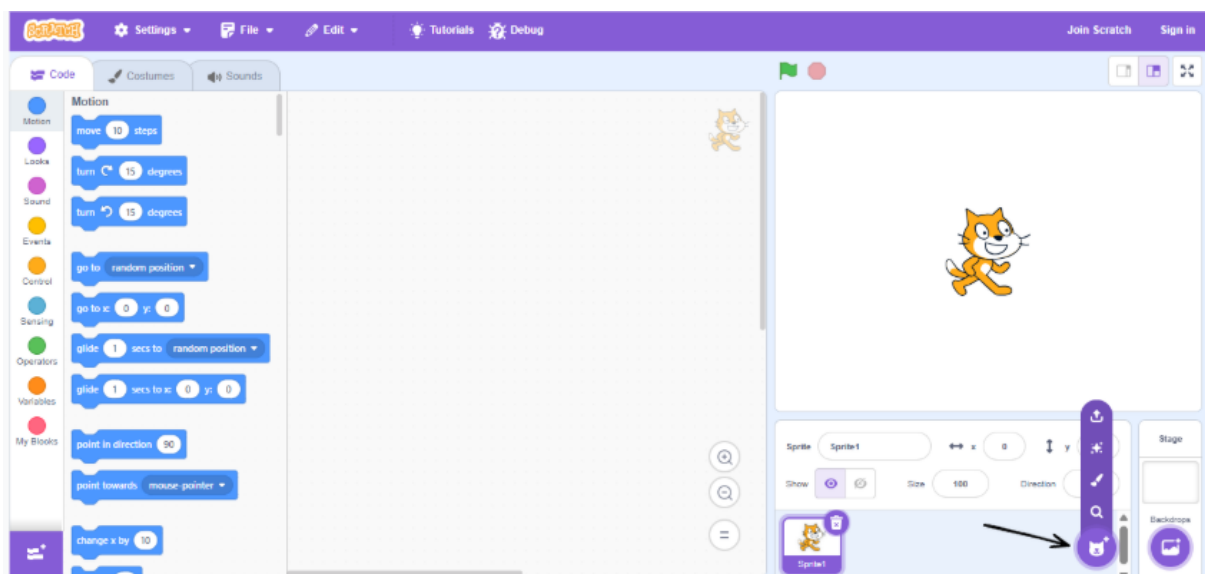
A **Sprite** is any character or object that appears in your project. Sprites are the things that **move, talk, change, and interact** in your game or animation. For example, in a game, your main character, the enemies, the coins, and even the background items can all be sprites.

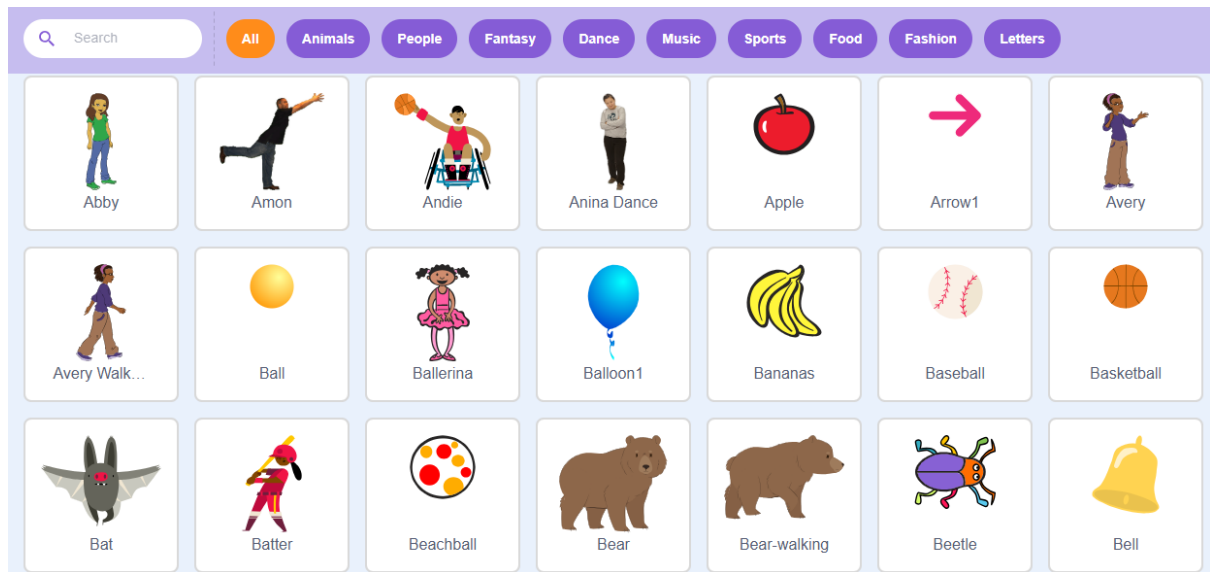
The default sprite

When you first open a new project, Scratch gives you a cat sprite automatically. You can keep this cat, customize it, or replace it with something else entirely.

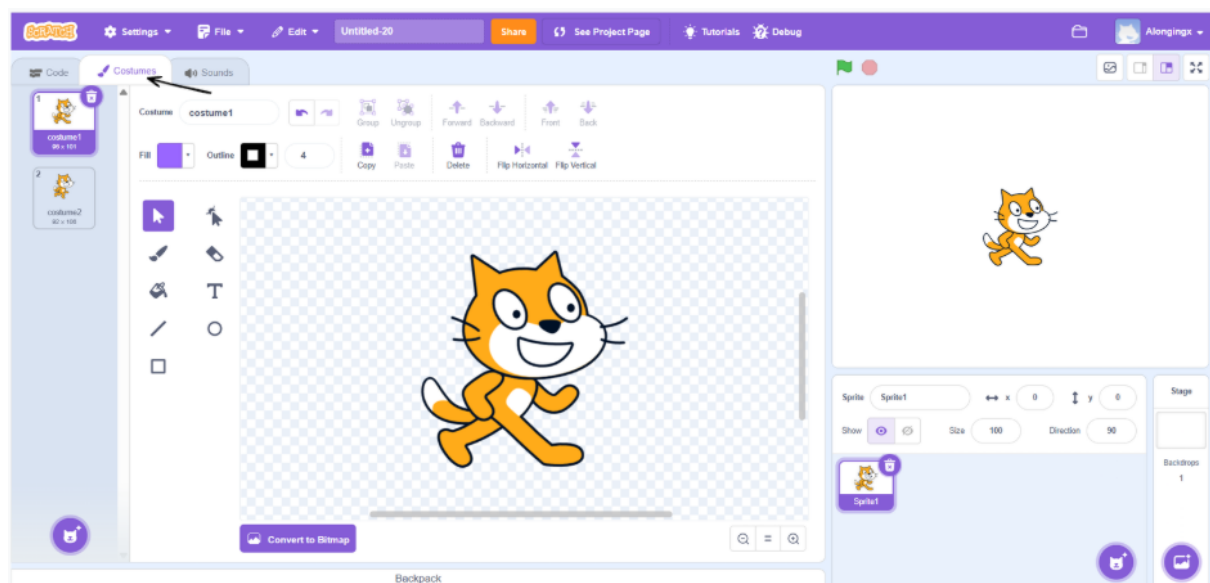
How to manage sprites

- **Choose from the Sprite Library:** Click the 'Choose a Sprite' button in the bottom-left corner. A library opens with hundreds of ready-made sprites sorted into categories like Animals, People, Fantasy, Sports, and more.

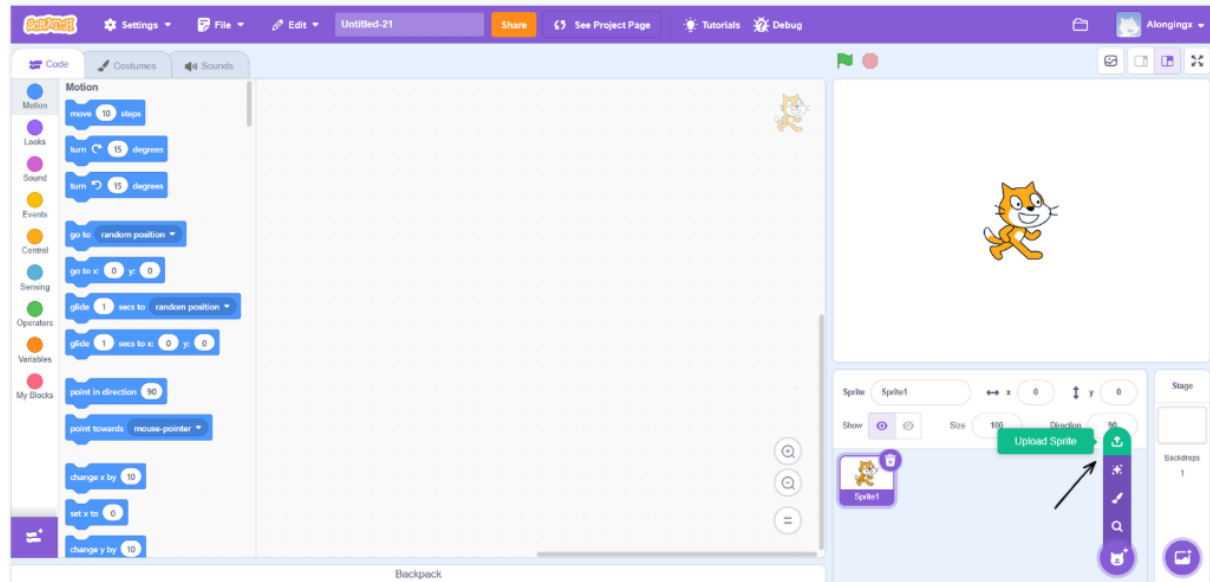




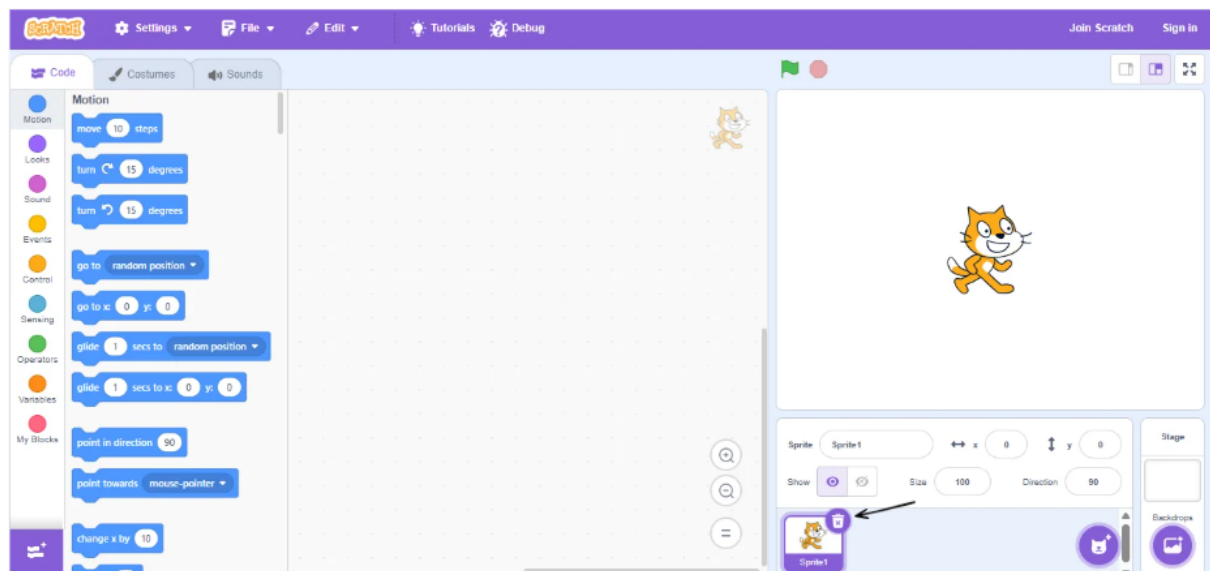
- **Paint your own:** Click the paintbrush icon to open the built-in drawing editor and create a completely custom sprite from scratch.



- **Upload an external sprite:** Click the upload icon to use an image file from your computer as a sprite.



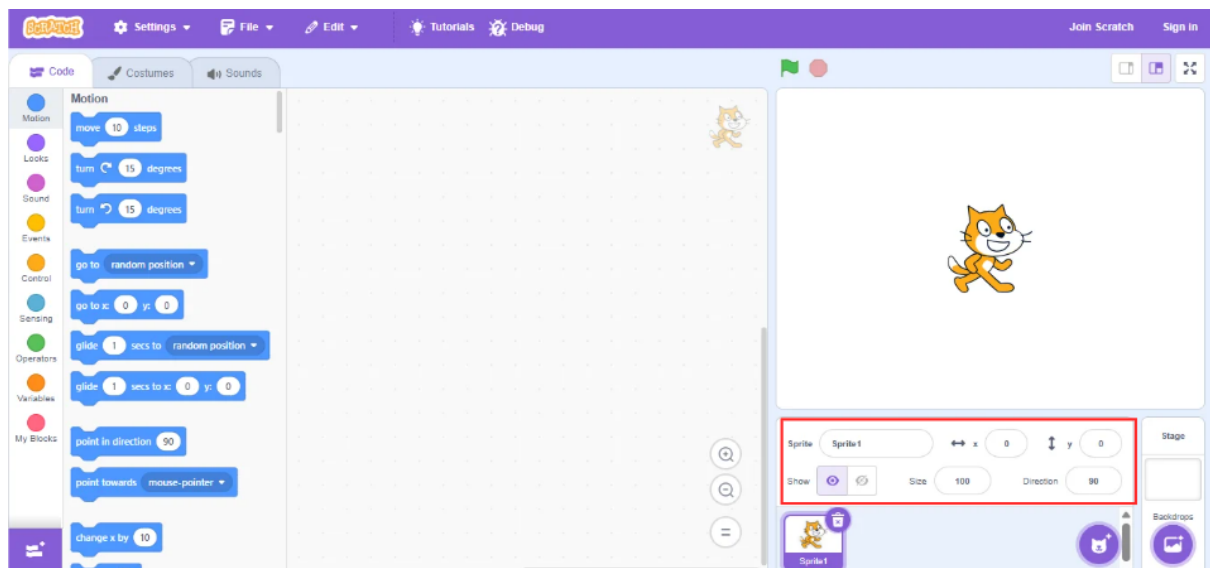
- **Delete a sprite:** Click the dustbin (trash) icon that appears when you hover over a sprite in the Sprite Panel below the stage.



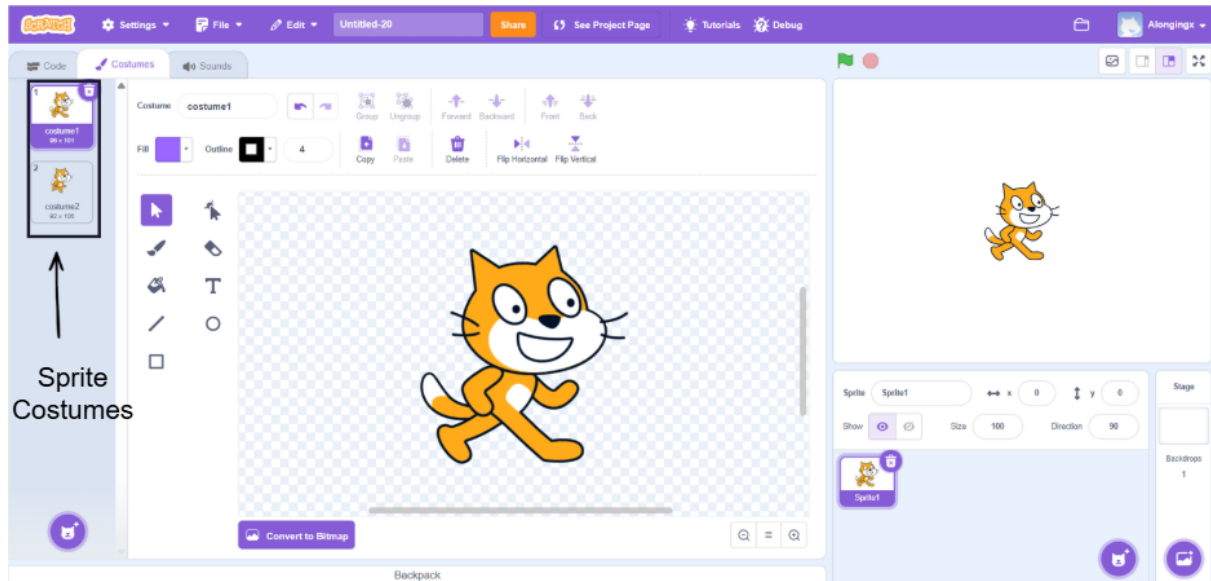
Sprite properties

Below the Stage Area, you will find controls for each sprite. You can adjust:

- **Name:** Give your sprite a descriptive name to keep your project organized.
- **Position (x, y):** Set exactly where the sprite appears on the stage using coordinates.
- **Size:** Make the sprite larger or smaller as a percentage (100 = normal size).
- **Direction:** Control which way the sprite is facing, measured in degrees.
- **Show/Hide:** Toggle whether the sprite is visible or invisible at the start of the project.



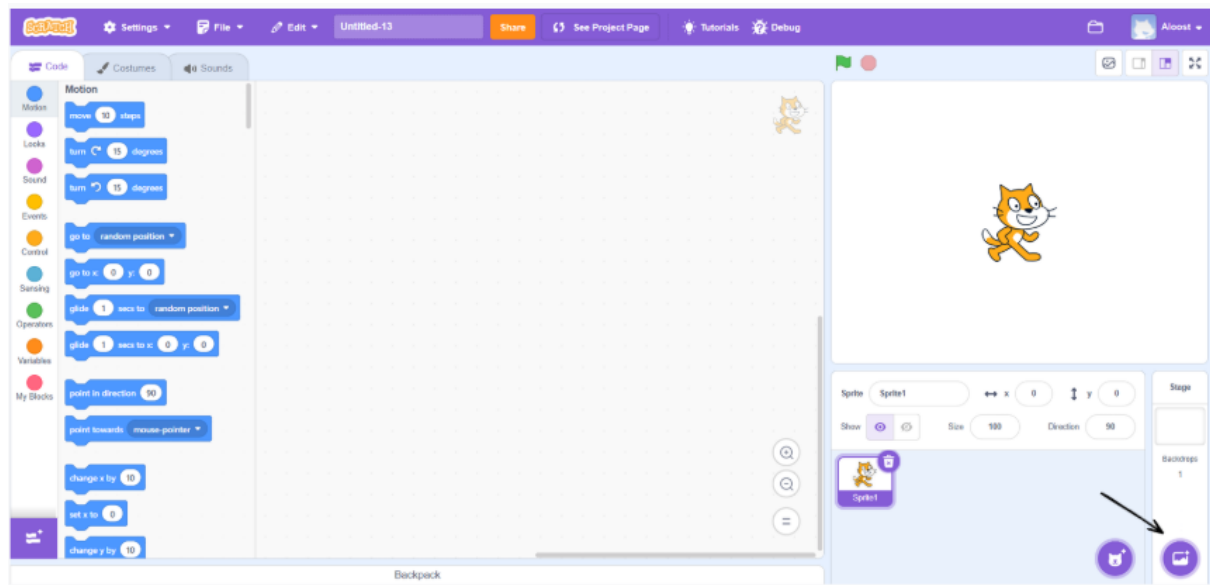
Costumes: Each sprite can have multiple costumes — different versions of how it looks.



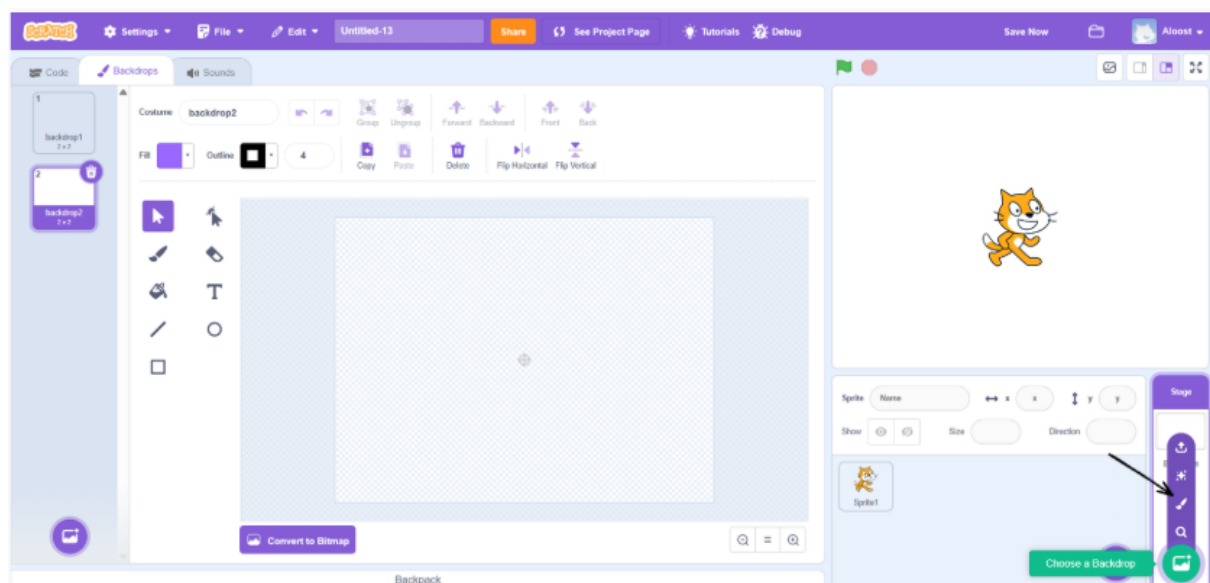
Backdrops

A **Backdrop** is the image shown behind all the sprites on the Stage — it works just like a costume, except it belongs to the Stage itself rather than to any one sprite. Think of it as the scenery in a play: it sets where the action happens, while the sprites are the characters moving around on top of it.

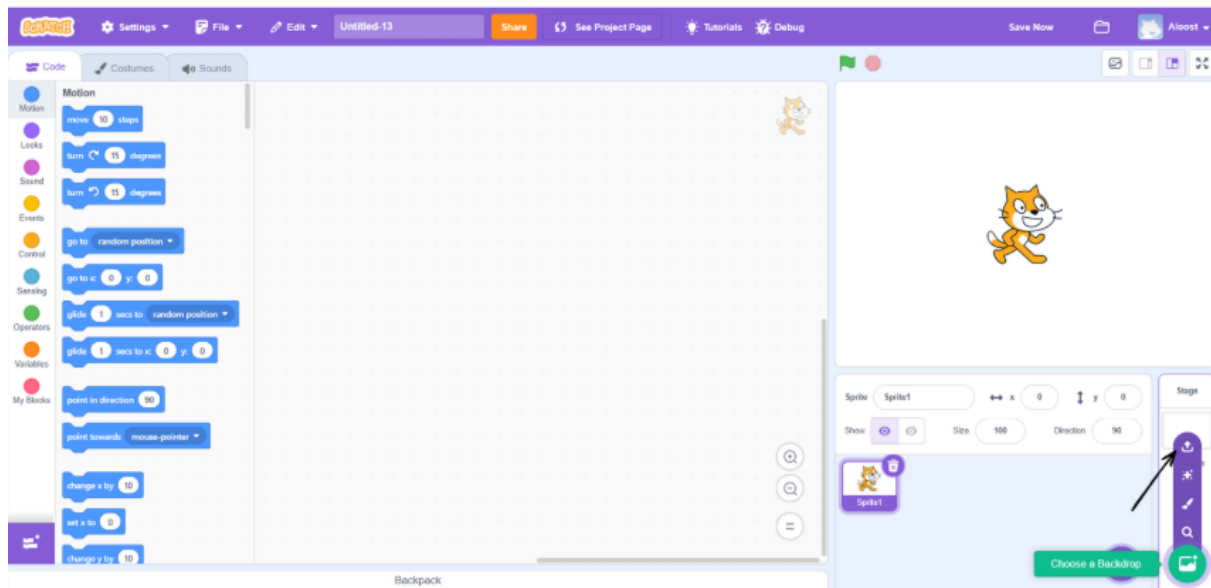
- **Choose a backdrop:** Click the 'Choose a Backdrop' button in the bottom-right corner, below the Stage, to browse the built-in library of backdrops sorted by category (Outdoors, Space, Indoors, and more).



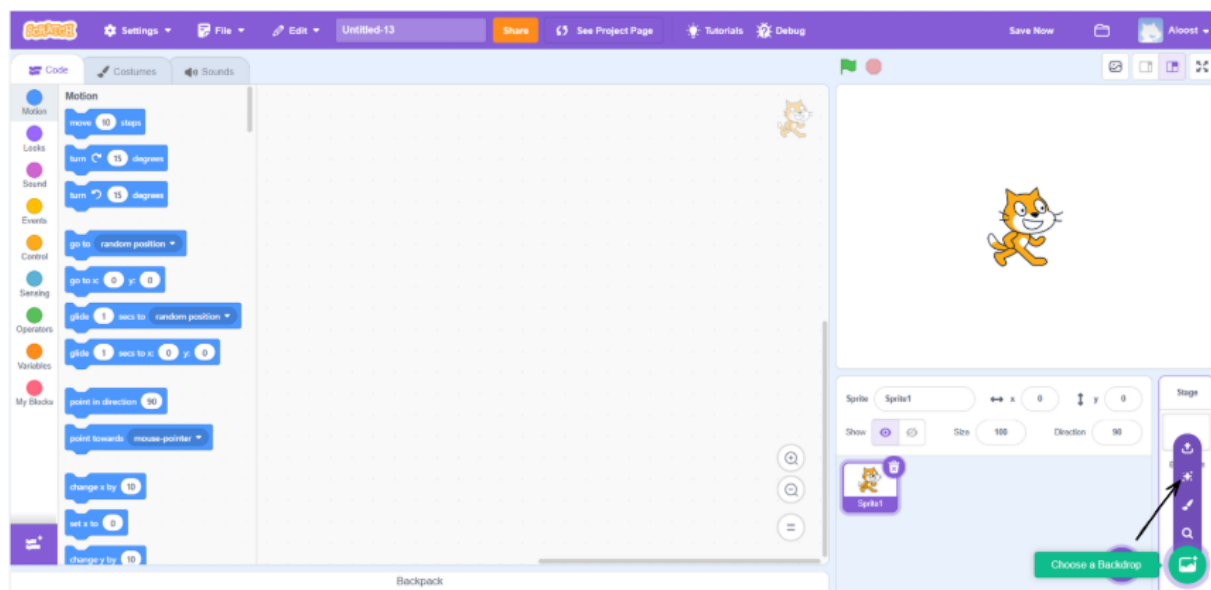
- **Paint your own:** Use the built-in Paint Editor to draw a custom backdrop from scratch, or paint on top of an existing one.



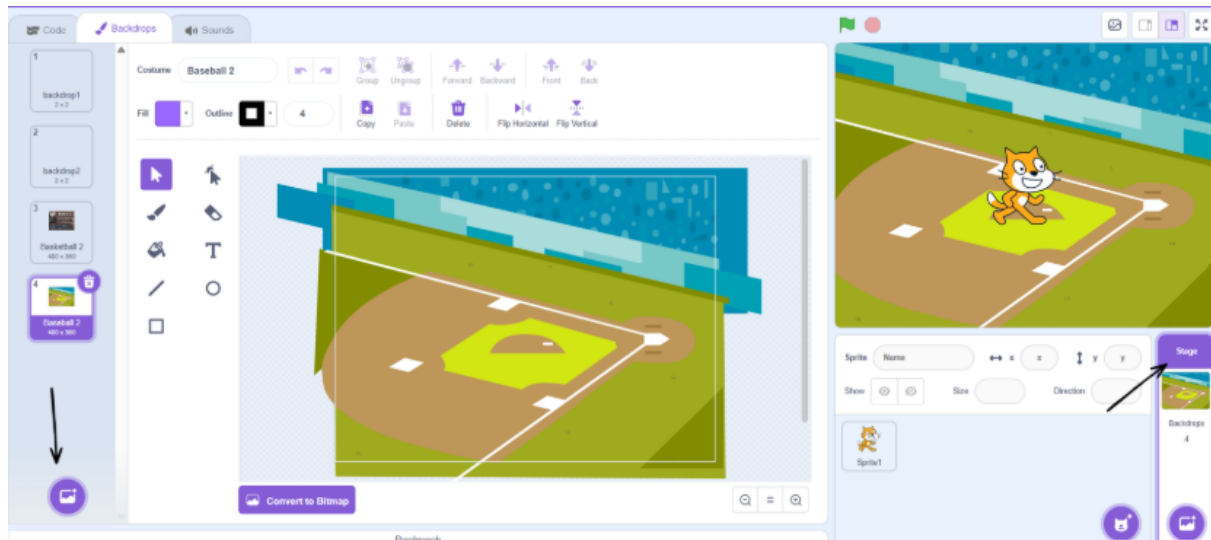
- **Upload an image:** Upload a picture from your computer to use as a backdrop.



- **Surprise:** Let Scratch pick a random backdrop for you.



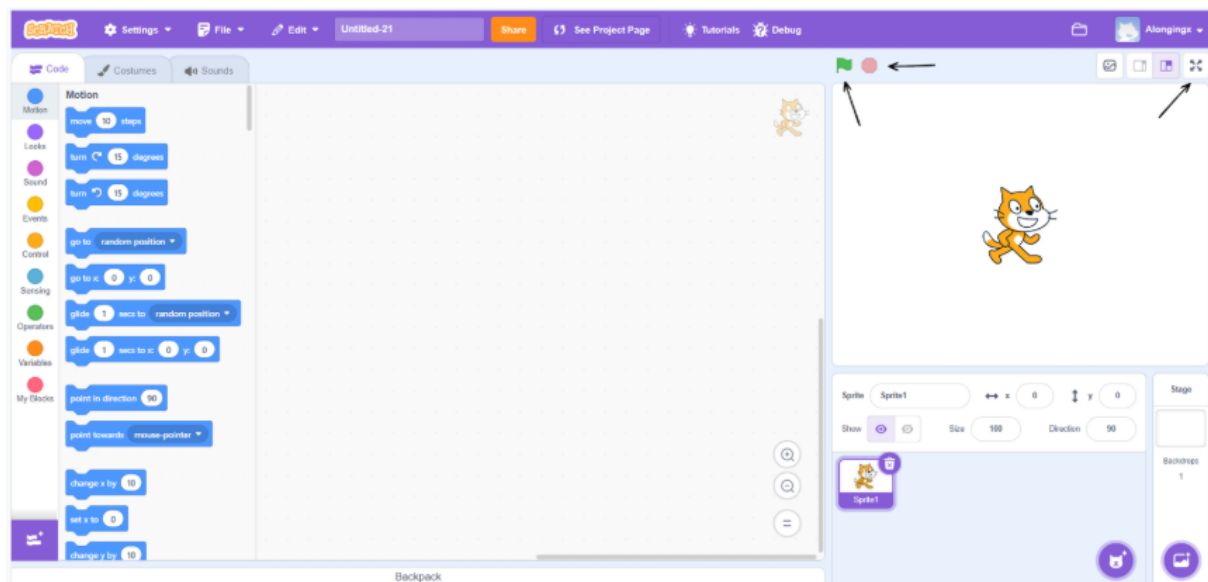
- **Add more than one:** A project can hold multiple backdrops. Click the Stage's tab to see, rename, edit, or delete them, just like managing a sprite's costumes.



3. Stage Area

The **Stage Area** is where you can see your project in action — it is the 'screen' your audience will see when they play your game or watch your animation.

- **Live preview:** Click the green flag above the stage /the code itself to run your project and see sprites move and interact in real time.
- **Stop button:** Click the red circle next to the green flag to stop the project at any time.
- **Full-screen mode:** Click the full-screen icon in the top-right corner of the stage to expand it to fill your entire display, great for testing and presenting your project.



The coordinate system

The Stage uses an **(x, y) coordinate grid** to position everything precisely. The point **(0, 0) is at the exact center** of the stage. Here is how to read the grid:

- Moving right increases the x value (positive x). Moving left decreases it (negative x).
- Moving up increases the y value (positive y). Moving down decreases it (negative y).

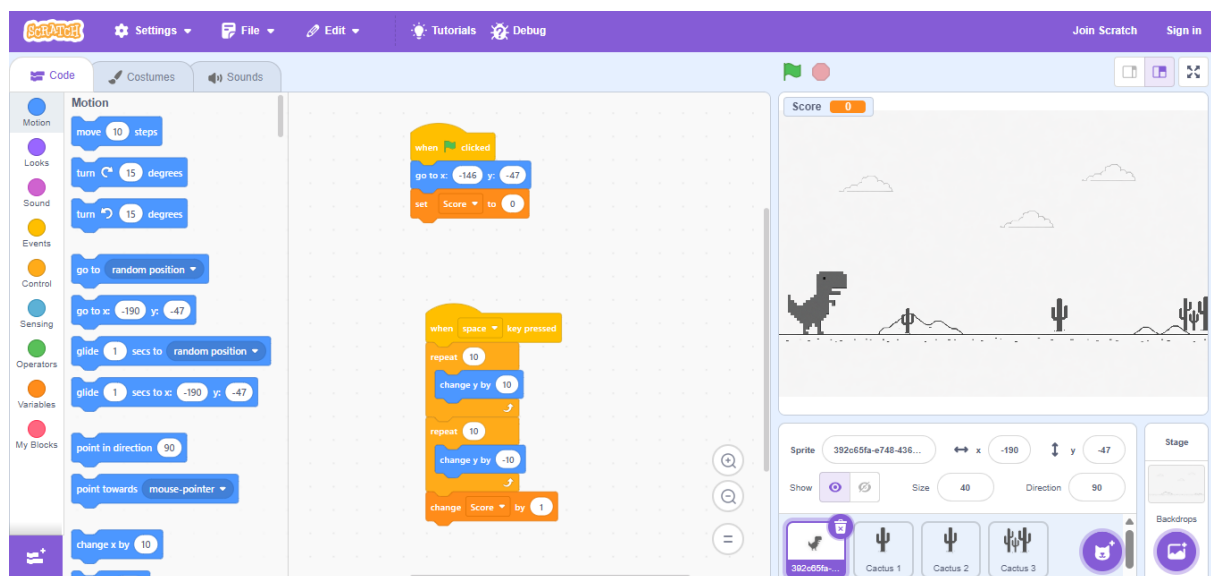
- The stage goes from $x = -240$ to $x = 240$ horizontally, and from $y = -180$ to $y = 180$ vertically.

Tip: You can see the exact coordinates of your mouse pointer as you move it across the Stage — look in the bottom-right of the stage area. This is very helpful for placing sprites in precise positions.

4. Script Area

The **Script Area** is where you build your programs by dragging blocks from the Programming Palette and snapping them together.

- **Drag and drop:** Click a block in the palette and drag it into the script area. Release it to place it there.
- **Snap blocks together:** Drag a block near another and you will see a highlight showing where it will connect. Release to snap it into place.
- **Each sprite has its own scripts:** When you click a sprite in the Sprite Panel, the Script Area shows only that sprite's code. Different sprites can have completely different scripts(code) running at the same time.
- **Right-click to manage blocks:** Right-clicking a block or script gives you options to duplicate, delete, add a comment, or view its help information.



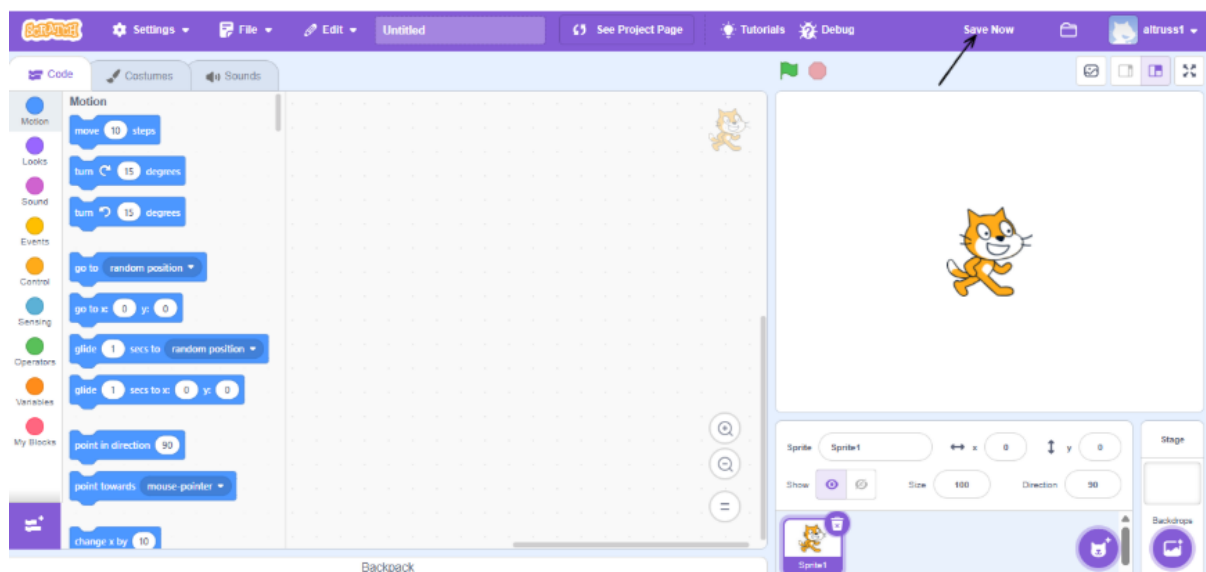
Connected blocks = Scripts: When you snap multiple blocks together, the result is called a Script. A script is a set of instructions that tells a sprite what to do.

How to Save Your Project

Scratch automatically saves your work as you build, as long as you are logged into a Scratch account. You will see a brief 'Saving...' message at the top of the editor when this happens.

Manual saving

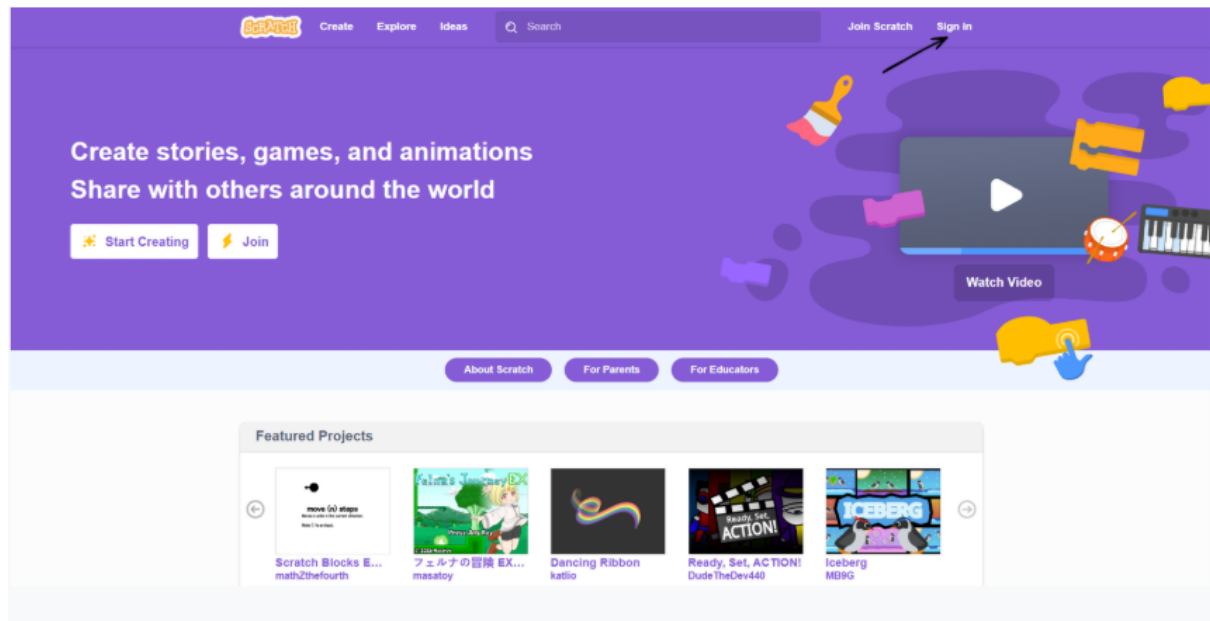
You can also save at any time yourself by selecting 'Save now' from the dropdown menu.



Important: You need an account to save

Without a Scratch account, you can still build projects, but they will be lost when you close the browser tab. Creating a free account solves this:

- Go to scratch.mit.edu and click 'Join Scratch'.



- Enter a username, password, your country, birth month and year, and gender.
- Enter an email address. Scratch will send a confirmation email – check your Spam or Junk folder if you do not see it.
- Click the link in the confirmation email to verify and activate your account.

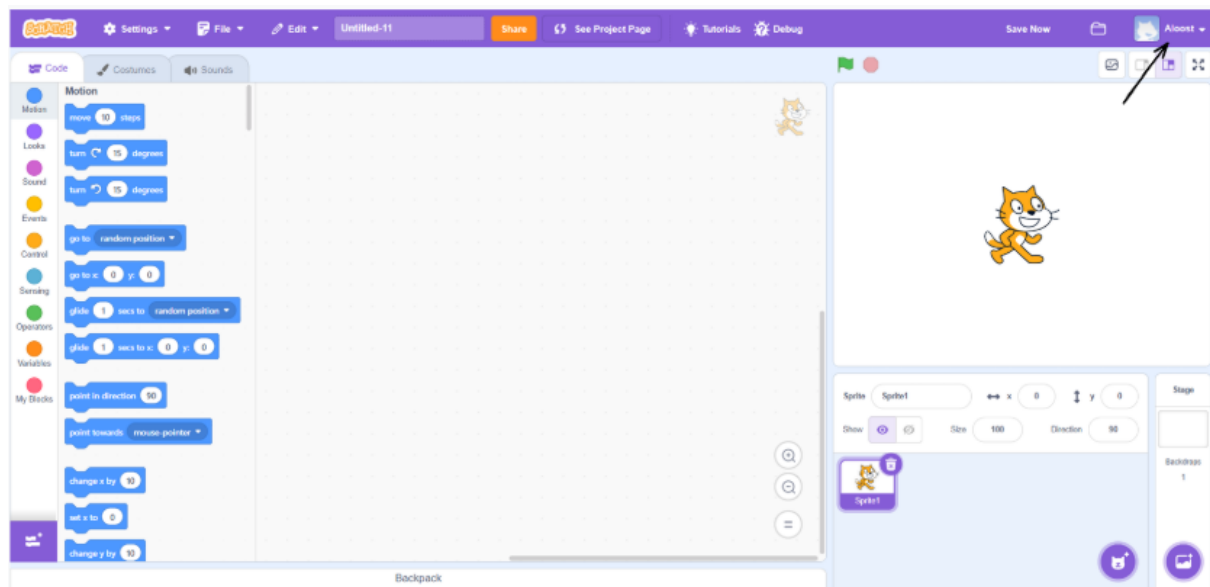
Offline saving: You can also download your project to your computer by going to File → Save to your computer. This saves a .sb3 file. You can reopen it in Scratch later even without an internet connection, using the offline Scratch App.

How to Share Your Project

Once your project is ready, you can share it with others around the world! Shared projects can be viewed, played, commented on, and even remixed by other Scratchers.

Steps to share

1. Go to your projects: Click your username in the top-right corner of the Scratch website and select 'My Stuff'.



2. Open the project: Find the project you want to share in your list and click on it to open it.

3. Add instructions: Before sharing, write some instructions in the 'Instructions' box to tell other users how to use and interact with your project (e.g., 'Press the spacebar to jump!')

4. Click Share: Click the orange 'Share' button at the top of the page. Your project is now publicly visible on the Scratch website.

5. Copy the link: Click 'Copy link' to get a shareable URL. You can send this to friends, family, or your teacher.

Privacy tip: If you want to share with only specific people (like your teacher) without making it fully public, you can share the link after clicking the Share button, then un-share it afterwards so it is not searchable on Scratch.