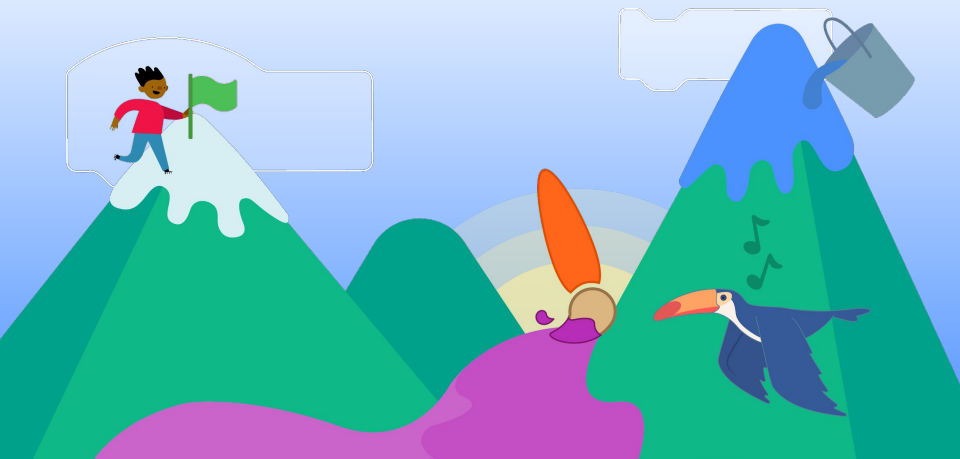


SCRATCH

Educator's Guide

- Teacher Accounts
- Beginner's Guide
- Lesson Guides





Teacher Accounts

As an educator, you can request a Scratch Teacher Account. A Scratch Teacher Account provides educators with additional features to manage student participation on Scratch, including the ability to create student accounts, organize student projects into studios, and monitor student comments. This guide will walk you through creating an account, creating a class, adding and managing your students, and creating class studios. You can also see our [Scratch for Educators](#) page and our [Teacher Account FAQ](#) page for additional information.

Create Your Teacher Account

Visit this link to get started: <https://scratch.mit.edu/educators/register>

You'll be prompted to create a username and password. **Make sure that your username does not contain your name or personal information**, like your school, location, or email address.

Within the Scratch community, all users are asked to refrain from sharing personal information through their usernames. **It's important that both you and your students follow these guidelines. Accounts that do not adhere to these guidelines will be deleted.**

Creating your teacher account

Create a username

QuirkyArtTeacher

Password

.....

Show password

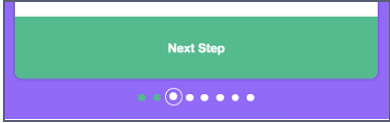


Next Step

Tips for making your username

- **Incorporate the name of the subject you teach**
 - ex: QuirkyArtTeacher
- **Use a tool or term from the subject you teach**
 - ex: MetamorphicRocks
- **Add an important date, be unique**
 - ex: Bibliophile1440
- **Make it memorable with a pun or an alliteration!**
 - ex: TyranoTeacher

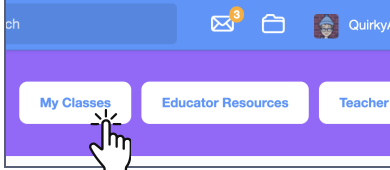

Be sure to make a note of your username and password.



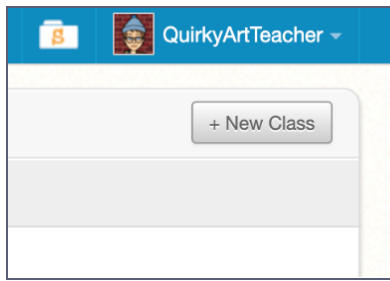
	<p>Click through each step to complete registration.</p>
	<p>Log into your email and confirm your email address.</p> <p>Check your spam folder if you do not see the email.</p> <p>Once you have confirmed your email address, we'll review your account.</p>
	<p>Once your account has been reviewed and approved, you will receive a welcome email. Then, you can log into your teacher account at scratch.mit.edu!</p>

Create a Class

Creating classes allows you to manage groups of students, and create studios where your students can add their projects.

<h3>Creating your class</h3>	
	<p>Once you have successfully logged into your Teacher Account, if you are looking at the homepage, there will be a bar at the top of the screen with three options. Select “My Classes.”</p>
	<p>You can also access your classes from the dropdown under your username.</p>



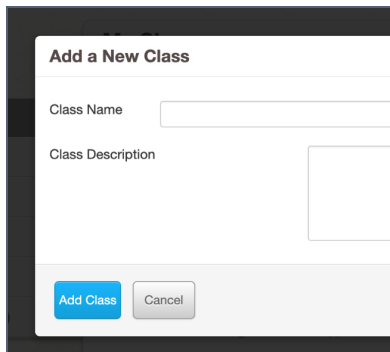


To create a class, click the “+ **New Class**” button at the top right of the page.

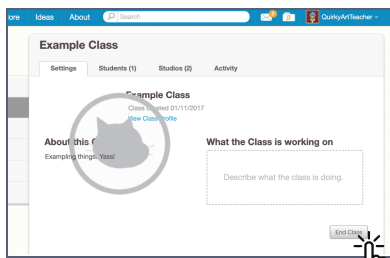
Enter the class name and description.

Warning: Do not include real names and locations, like the name of your school or city/town.

Once you have created a class, you can add students.



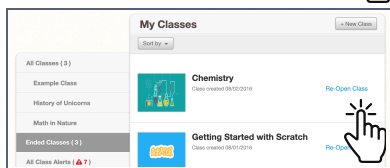
Ending your class



To end a class, under “My Classes,” choose your class and on the Settings tab, click the “End Class” button.

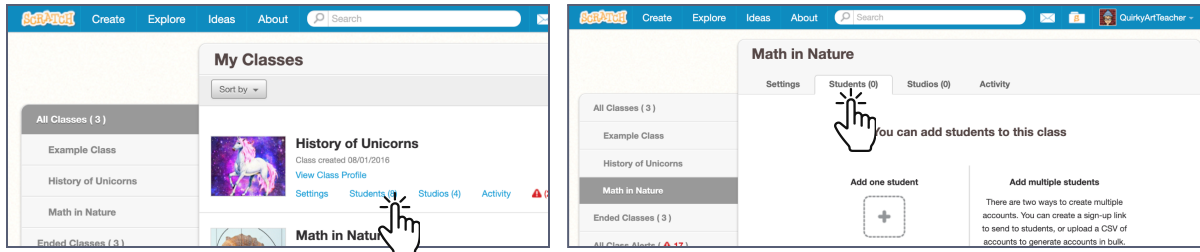
When you end a class, your class profile page will be hidden and your students will no longer be able to log in (but their projects and the class studios will still be visible on the site).

You may re-open the class at any time. By going to the “Ended Classes” tab and clicking the “Re-Open Class” link near the class you want to reopen.



Add Students to Your Class

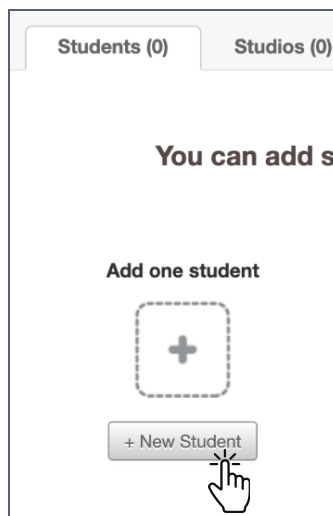
While on “My Classes,” select the class and then click on “Students” (either the link under the class name or the Students tab). Once created, your student accounts will appear here.



There are three ways to add students to your class. The first method allows you to add an individual student to a class. Methods 2 and 3 allow you to add multiple students to a class.

Tip: Create a naming convention as a guideline for generating usernames. For example, you may want each name to include an abbreviation for the course name, the class section, and the student’s number on your roster (ex: VisArts-02-17). Use the [Student Username List](#) we have created to record the usernames and passwords your students have created.

Method 1: Add Individual Students



Click the “+ New Student” button to add students individually.

Confirm the correct class is showing in the “Add to Class” dropdown menu.

You will be prompted to create a username for this student.

Warning: Make sure that the usernames you create do not contain identifying information about yourself, your students, or your school. Accounts that do not adhere to these guidelines will be deleted.

The password for this student username will automatically be set as the username of your teacher account.



Add New Student

Add to Class: Math in Nature

Username: type student username here

! Usernames must not reveal the identity of students in any way.

I understand that for safety and privacy, Scratch must **delete** any accounts which include real names, school name, or contact information.

Password: Will be set to the teacher's username: **QuirkyArtTeacher**

Add Student Cancel

Have students log into their accounts and change their passwords as soon as possible.

Tip: It is not possible to add an existing Scratch account to a classroom. You will need to create a new Student Account for them using your Teacher Account. A student can only be a part of one class, and it is not possible to transfer students from one class or teacher to another.

Method 2: Student Sign-up Link

Activity

Students to this class

Add multiple students

There are two ways to create multiple accounts. You can create a sign-up link to send to students, or upload a CSV of accounts to generate accounts in bulk.

Student Sign-up Link CSV Upload

Clicking the “Student Sign-Up Link” button brings you to another window and clicking the “Get Link” button will generate a link that will allow your students to join the class you have just created. The link will start with “http://scratch.mit.edu/signup...”

Students can then create their own usernames and passwords.

Warning: Remind your students that, when making their usernames, the username should not contain identifying information about themselves, their teacher, or their school. Accounts that do not adhere to these guidelines will be deleted.

Sign-up Link

Get a sign-up link that students can use to register for your class. They will be directed to a class page where they can “Join this Class”.

! Usernames must not reveal the identity of students in any way.

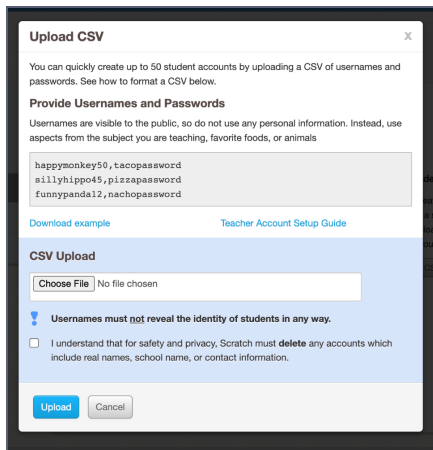
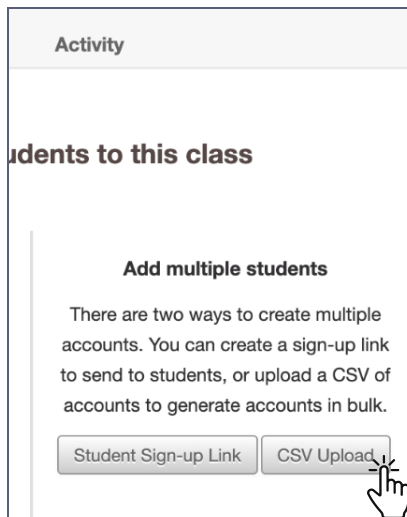
I agree to remind my students not to use their real names, school name, contact information or student ID numbers.

Get Link

Close



Method 3: CSV Upload



The screenshot shows a spreadsheet template for student accounts. It has two columns, A and B, and two rows of student data.

	A	B
1	student1	password1
2	student2	password2

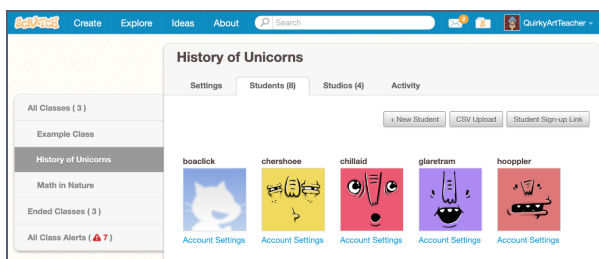
Click the “CSV Upload” button on the class page.

Using the template provided by clicking the “Download example” link, create a username and password for each of your students. You can use the template provided or create your own spreadsheet with student usernames in column A and passwords in column B. To upload your own template, you’ll need to save the file as a CSV file.

Once you’ve created usernames and passwords for each student and saved the file, click the “Choose file” button to locate the file, then click the “Upload” button.

It is not possible to add more than 250 students to a single class. You can, however, create a new class and add another 250 student accounts to each new class.

Warning: Make sure that the usernames you create do not contain identifying information about yourself, your students, or your school. Accounts that do not adhere to these guidelines will be deleted.



You can add students via any of these methods at any time under the “Students” tab.



Creating Studios for Student Work

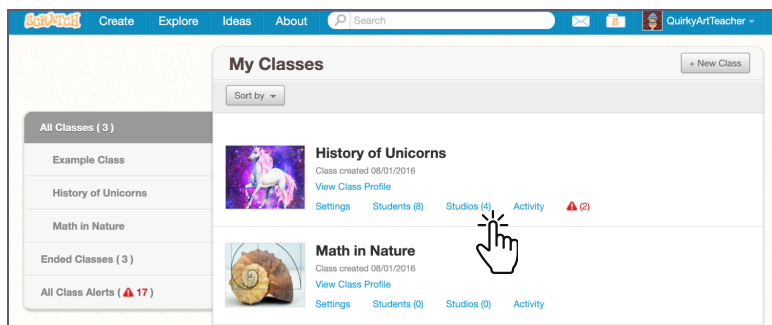
Studios allow you to create collections of student projects for specific classes or assignments. This makes it easier for you to view their projects throughout their creative process. It also makes it easier for students to collaborate and be inspired by each other's work.

Scratcher status is required in order to create a studio, and the person who created the studio is automatically assigned the role of "host." There is only one host per studio, and only studio hosts can edit the title, thumbnail, and description.

Studios are immediately public, even those created in the context of a class. Unlike Scratch projects, there is no share/unshare option for studios. Everyone can follow a studio, see studio comments and projects, and leave a comment or add a project (unless commenting or the ability to add projects is turned off).

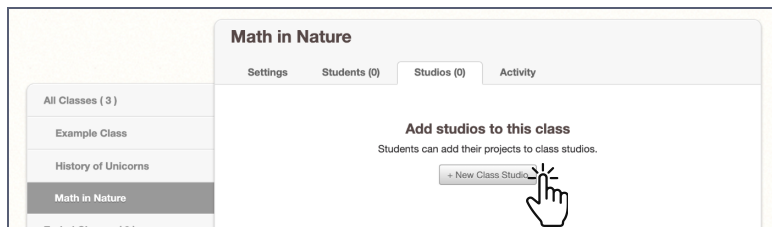
There are two ways to create a studio on a teacher account. Method one creates studios that automatically add all students in a class as curators. Method two creates studios without automatically adding students as curators, and students or any Scratcher can be individually added as curators.

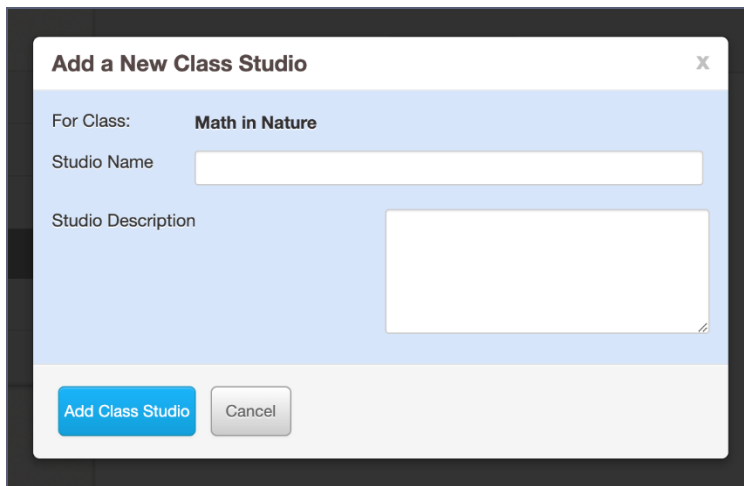
Method 1: Create a studio that automatically adds all students in a class as curators



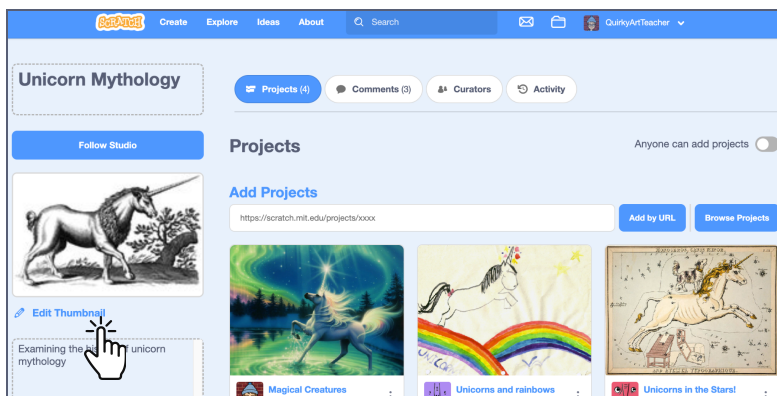
Once logged into your Scratch account, go to "My Classes."

Choose the class to assign the studio to, then click on "Studios" (either the link under the class name or the Studios tab). Then click the "+ New Class Studio" button.





On the window that appears, you will be asked to **give the studio a name and description**. (These can always be adjusted in the studio later.) In the description, you can share the theme of the studio, what kinds of projects you are looking to include... Just be sure your title and description don't reveal any personal information (like school name or first and last name).

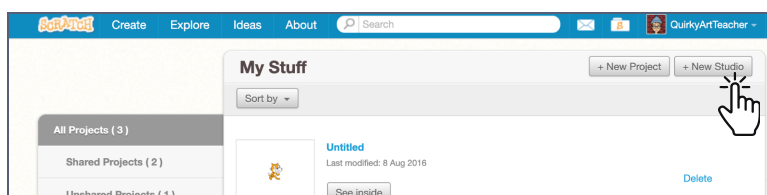


Then, click the “Add Class Studio” button.

Once in the studio, click the “Edit Thumbnail” button to change the default gray cat image in the upper left-hand corner. **Upload your own studio thumbnail image**. The maximum file size for a thumbnail is 512 KB and your image must be less than 500x500 pixels.

When you click on the “Curators” tab, you should see all the class students have been set as studio curators.

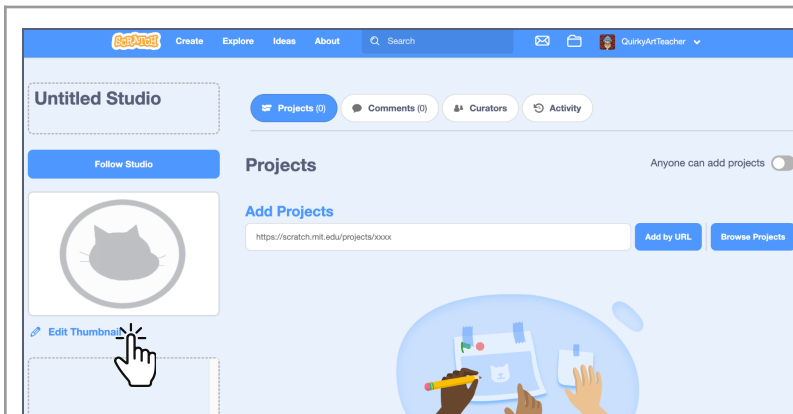
Method 2: Create a studio without automatically adding students as curators



Once logged into your Scratch account, go to “My Stuff.”

Choose the “+ **New Studio**” button at the top right.





Click on “Untitled Studio” to **give your studio a name and description**. In the description, you can share the theme of the studio, what kinds of projects you are looking to include... Just be sure your title and description don't reveal any personal information (like school name or first and last name).

Click the “Edit Thumbnail” button to change the default gray cat image in the upper left-hand corner. **Upload your own studio thumbnail image**. The maximum file size for a thumbnail is 512 KB and your image must be less than 500x500 pixels.

When you click on the “Curators” tab, you should see no curators have been assigned yet.

See our [Studio Guide](#) for detailed information on:

- Studio Definitions
- How to Manage a Studio
- How to Add Projects to a Studio

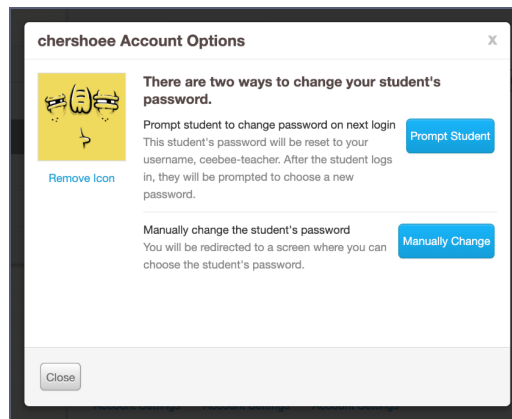


Managing Your Students

Managing a student



You can manually **reset a student password** from within your Scratch Teacher Account. First, navigate to “My Classes” and choose the class and go to the “Students” tab. Then click on the “Account Settings” link below the student’s account.



You cannot delete a student’s account by using a Teacher Account, but students can delete their own account.



You can see alerts about notifications your students receive on the “Activity” tab of a class or the “All Class Alerts” tab.

Tip: If you’d like to translate this guide, [click here to make a copy](#) of this Google doc.

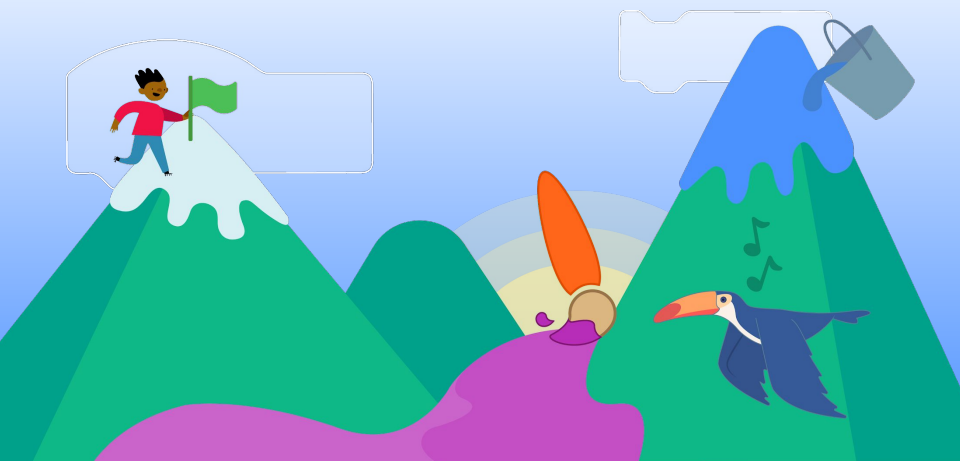


Getting Started with

SCRATCH

Beginner's Guide

Create your own games, animations,
interactive stories, and more.



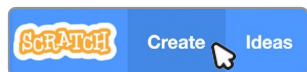


GETTING STARTED

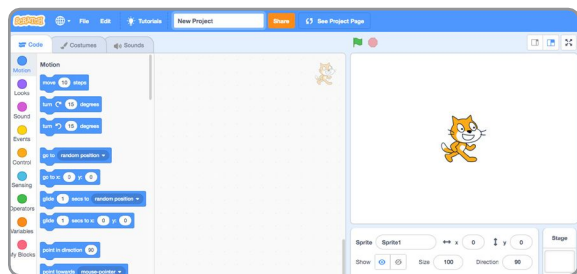
You can use Scratch online at: scratch.mit.edu

scratch.mit.edu

Once you've navigated to scratch.mit.edu, click **Create**.



This will bring you to the **Scratch Editor**, where you can start creating projects.



If your computer uses an older operating system, or your internet connection is unreliable, you can download Scratch and use it offline.



Visit: <https://scratch.mit.edu/download>
for information on downloading and
installing the Scratch app.



THE SCRATCH EDITOR

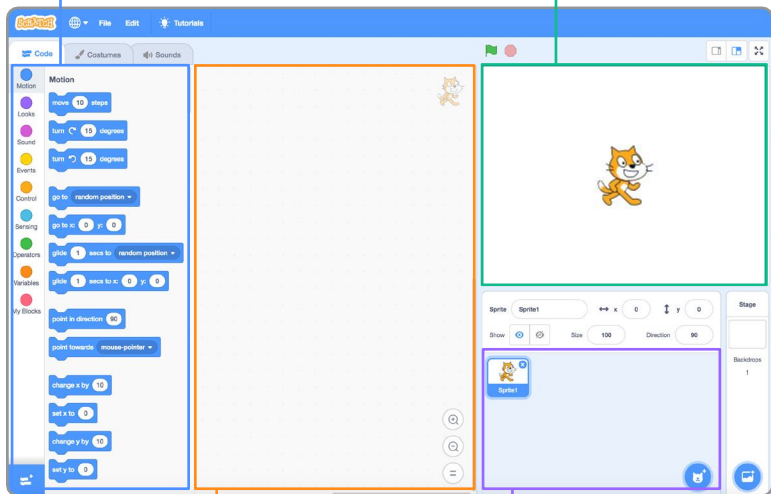
The Scratch Editor is where you create projects in Scratch. Here are its main parts:

Blocks Palette

Blocks for coding your projects

The Stage

Where your creations come to life



Coding Area

Drag in blocks and snap them together to code your sprites

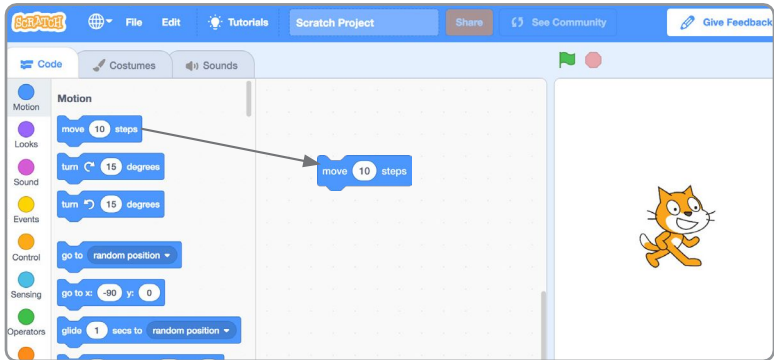
Sprite List

Click the thumbnail of a sprite to select it

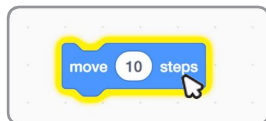


LET'S CODE!

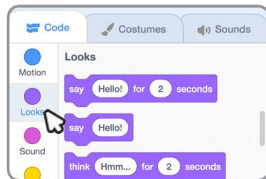
To code projects in Scratch, you snap together blocks. Start by dragging out a **move** block.



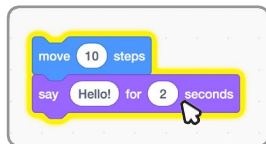
Click the block to try it.
Does your cat move?



Now say something!
Click the **Looks** category.



Drag out a **say** block.
Snap it onto the **move** block. Click on your blocks to try them.





WHAT IS A SPRITE?

In Scratch, any character or object is called a sprite. Every new project in Scratch starts with the Cat sprite.



Want to choose a different sprite?



Click the New Sprite icon.

Or, hover over the **New Sprite** icon to see more options.

Upload an image from your computer.

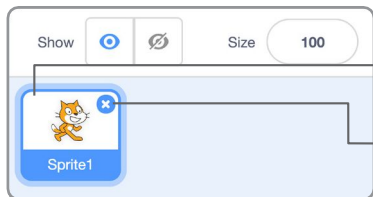
Draw your own sprite.



Click for a surprise sprite!

Choose a sprite from the library.

Want to **delete a sprite** from your project?



First, select the sprite by clicking on its thumbnail in the Sprite List.

Then, click here to delete the sprite.



WHERE IS YOUR SPRITE?

Every sprite has an **x** and **y** position on the Stage.

x is the position of the sprite from left-to-right.

y is the position from top-to-bottom.

At the very center of the stage, **x** is 0 and **y** is 0.



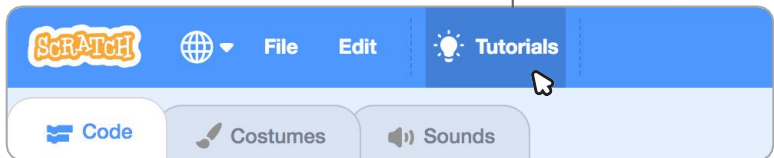
When you move your sprite, you can see its **x** and **y** position change.



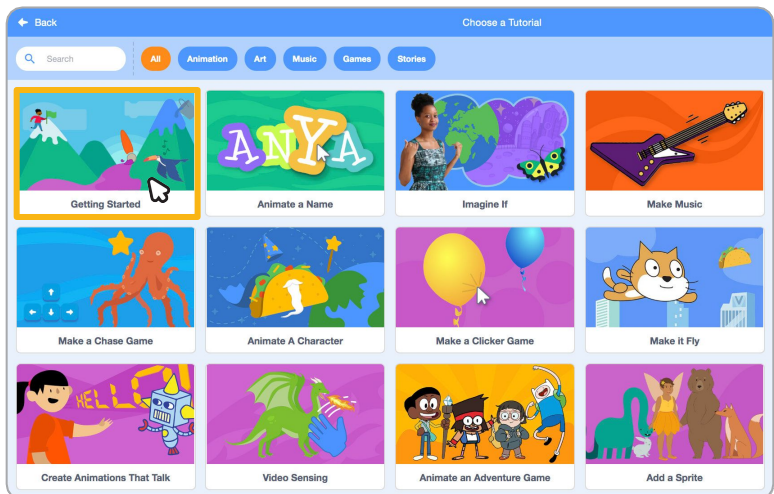
TUTORIALS

There are a range of tutorials available in the Scratch **Tutorials Library**, which guide learners in creating projects with Scratch. Students can get started making their own stories, animations, and games.

You can get to the Tutorials Library from the Scratch Editor by clicking the **Tutorials** button.



The **Getting Started** tutorial will walk you through the basics.

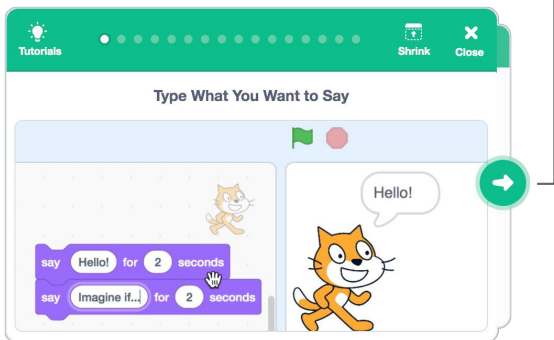




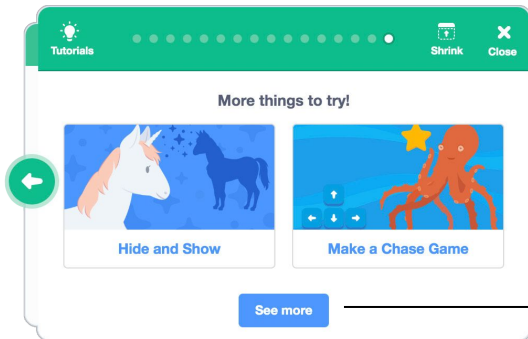
TUTORIALS

Once you've selected the tutorial, it will open in the Scratch Editor.

Click the green arrow to see each step.



When you've reached the end of a tutorial you can select another tutorial, and keep adding to your project.



Click here to see all the Tutorials.

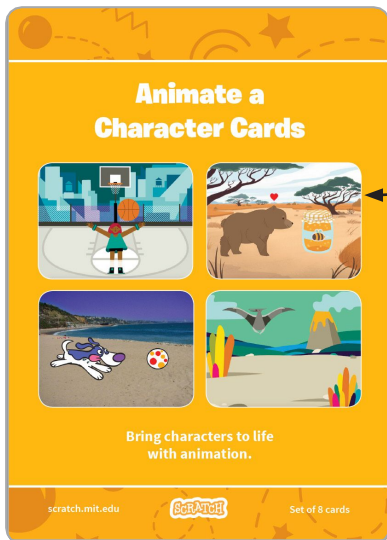


CODING CARDS

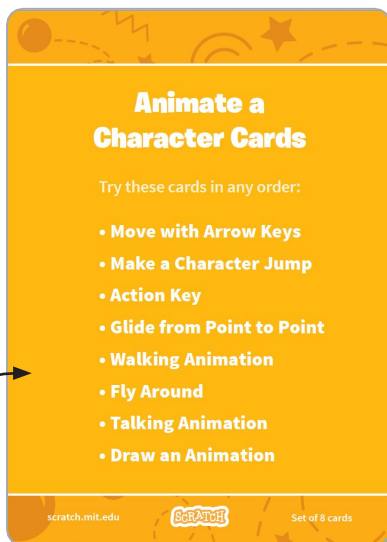
The Scratch **Coding Cards** provide another way to learn to create projects with Scratch. Download the cards at scratch.mit.edu/ideas.

Each set of cards starts with a title card, which shows you what you can create.

The **Animate a Character** cards are a great set to start with.



Examples of what you can create



A list of all the cards in this set



USING THE CODING CARDS

After each title card is a series of cards walking you through each step of creating a project.

Add your own sprites, backdrops and more!



The front of each card shows you what you can create.



The back shows you how to do it.



GET CREATIVE!

Encourage students to use their imagination as you create projects. There are many different ways they can make their Scratch projects unique.

You can choose or draw your own characters.



Choose a sound or record your own.



Try changing numbers or adding blocks to your code to see what happens.



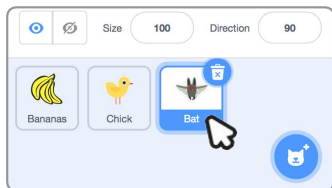
Experiment and customize your project however you want!



GET CREATIVE WITH SPRITES!

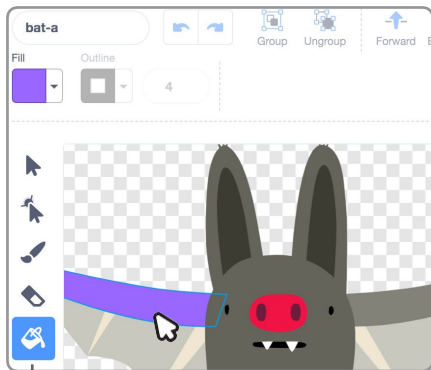
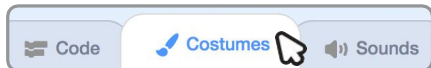
Scratch has its own paint tools, which allow you to customize sprites from the library, or even create sprites of your own.

Let's start by editing a sprite from the library.



Select a sprite to edit by clicking on it in the Sprite list.

Click the **Costumes** tab at the top left to see the paint tools.



The paint tools allow you to recolor sprites, add to them with a paint brush, and change them in a variety of ways.

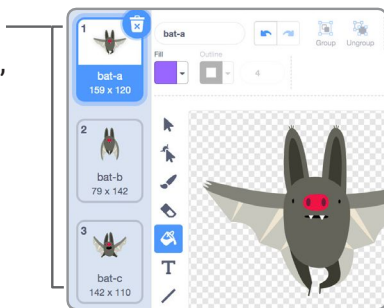
You can use the **paint bucket** tool to recolor different parts of a sprite.



GET CREATIVE WITH SPRITES!

Some sprites, like the Bat sprite have multiple costumes, or poses.

You can see a sprite's costumes by clicking the **Costumes** tab.

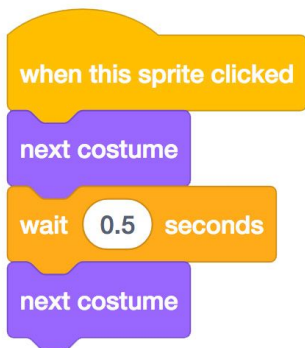


If your sprite only has one costume, right click on the costume to duplicate it (On Mac control + click).



Now you can modify the second costume using the paint tools, so your sprite has two different poses or facial expressions.

Click the **Code** tab, then try adding these blocks.

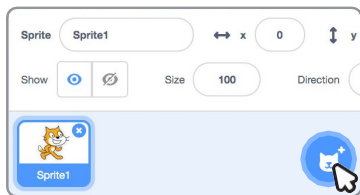




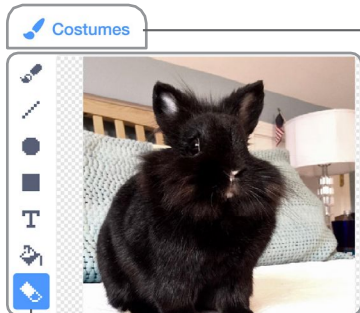
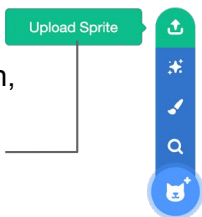
ADD YOUR OWN PHOTOS

There are many ways to create your own sprites and artwork using the Scratch paint tools.

You can create your own sprites by uploading photos or images and erasing the background.

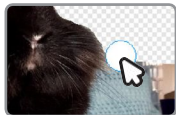


Hover over the New Sprite button, then select **Upload Sprite**.



Next click the **Costumes** tab. You will see bitmap tools for editing your image.

Click the **eraser** icon and use the eraser tool to remove the background from your photo.



Tip: to adjust the size of the eraser, type a larger or smaller number.

There are two modes for drawing in Scratch:

1. **Bitmap Mode** allows you to edit photos and paint with pixels.
2. **Vector Mode** allows you to create and edit shapes.

Tip: If you'd like to remix and customize this guide, [click here to make your own copy](#) of the Google Slides template.



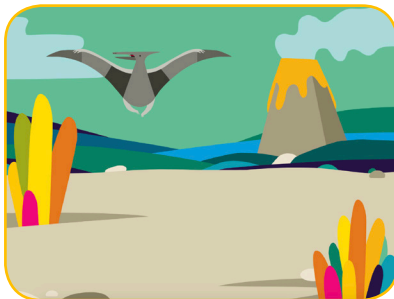
Created by the Scratch Team (scratch.mit.edu) and shared under the Creative Commons Attribution-ShareAlike 4.0 International Public License (CCbySA 4.0).

||| ||| ||| ||| ||| COLOR SCHEME

EDUCATOR GUIDE

Animate a Character

With this guide, you can plan and lead a 55-minute lesson using Scratch. Students will gain experience with coding as they bring characters to life with animation.



Lesson Outline

Objective: Students will become familiar with the Scratch environment by animating a character.



IMAGINE
10 minutes

First, gather as a group to introduce the theme and spark ideas.



CREATE
40 minutes

Next, help students as they animate characters, working at their own pace through the tutorial.



SHARE
5 minutes

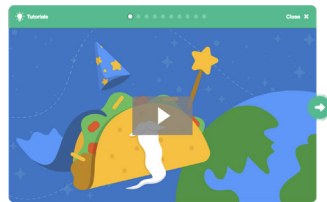
At the end of the session, gather together to share and reflect.

Get Ready for the Lesson

Use this checklist to prepare for the lesson.

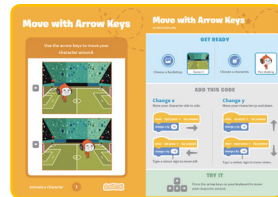
Preview the Tutorial

The *Animate a Character* tutorial shows students how to create their own projects. Preview the tutorial before your lesson and try the first few steps: scratch.mit.edu/tutorials



Print the Activity Cards (optional)

Print a few sets of *Animate a Character* cards to have available for students during the lesson. scratch.mit.edu/ideas



Make sure students sign into their Scratch accounts

Have students sign into their own Scratch accounts at scratch.mit.edu.

Set up computers or laptops

Arrange computers so that students can work individually or in pairs.

Set up a computer with projector or large monitor

You can use a projector to show examples and demonstrate how to get started.

Imagine



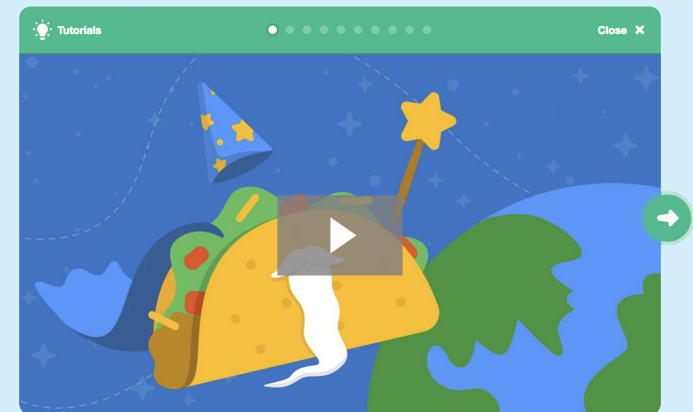
Begin by gathering the students to introduce the theme and spark ideas for projects.

Warm-up Activity: Favorite Characters

Gather the group in a circle. Ask each student to say their name, then share a favorite character from a book, movie, or TV show, and one or two of their favorite things about that character.

Provide Ideas and Inspiration

To spark ideas, watch the *Animate a Character* video at the start of the tutorial. The video shows a variety of projects to spark ideas and inspiration.



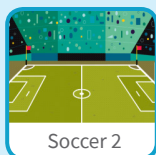
View the scratch.mit.edu/ideas

Demonstrate the First Steps



Demonstrate the first few steps of the tutorial so students can see how to get started.

Choose a backdrop.



Choose a character to animate.



Make your sprite move right and left with arrow keys:

when right arrow key pressed
change x by 10

Choose right arrow from the menu.

when left arrow key pressed
change x by -10

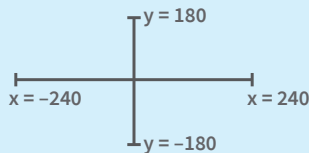
Choose left arrow from the menu.

Type a minus sign to move left.

Press the left arrow and right arrow keys on your keyboard to move.



Helpful Hint: Understanding x y coordinates will help students figure out how to move sprites around the stage.



y is the position on the Stage from top to bottom.

x is the position on the Stage from right to left.

Create



Support students as they create animated Scratch projects.

Start with Prompts

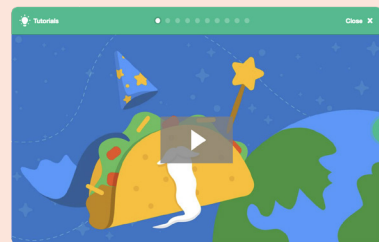
Ask students questions to get started

Which character would you like to animate?

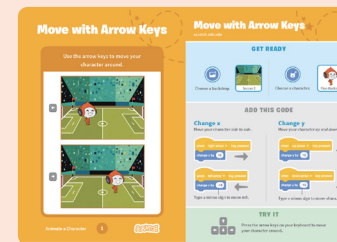
What do you want your character to do?

Provide Resources

Offer options for getting started



Some students may want to follow the online tutorial: scratch.mit.edu/animate



Others may want to explore using the activity cards: scratch.mit.edu/ideas

Suggest Ideas for Starting

- Choose a character to animate.
- Animate your character: make it jump, fly, glide or talk!
- Choose a backdrop.



More Things to Try

- Try combining more than one kind of animation.
- If you're not sure what to do, pick a card and try something new.
- Add a second character or object to animate.



Support collaboration

- When someone gets stuck, connect them to another participant who can help.
- See a cool idea? Ask the creator to share with others.



Encourage experimenting

The Animate a Character activity can be done in any order, with a range of different character and object sprites.

Encourage students to try new things:

What will your character do next?

How can you make your animation interactive?



Share

Have students share their project with their neighbors.

Ask questions they can discuss:

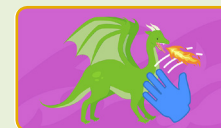
What do you like best about the project you made?

What was the hardest part?

If you had more time, what would you add or change?

What's Next?

Students can use the ideas and concepts from this lesson to create a wide variety of projects. Encourage them to continue developing their projects into games, stories or interactive art with the resource listed below.



Video Sensing

Interact with characters and objects in Scratch with video sensing.

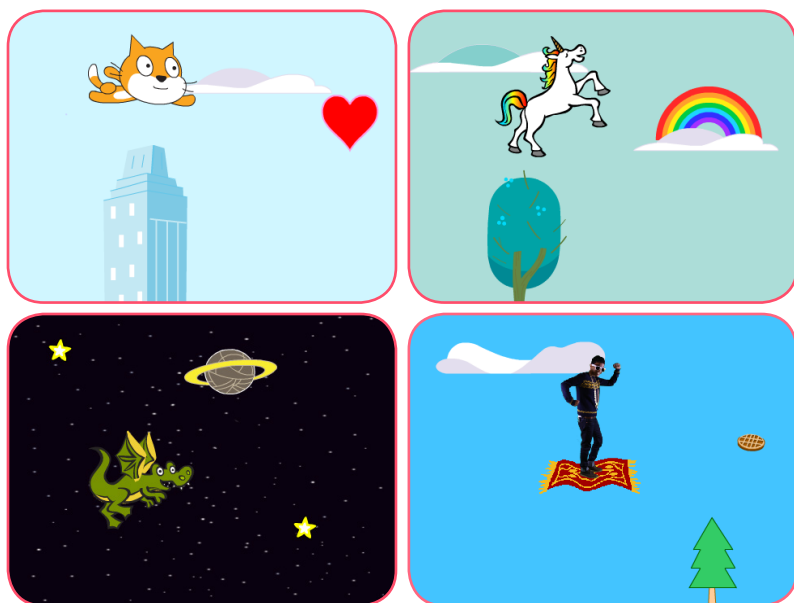
Find this project and more in the Tutorials library: scratch.mit.edu/ideas

Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab.

EDUCATOR GUIDE

Make It Fly

With this guide, you can plan and lead a 55-minute lesson using Scratch. Students will choose a character and program it to fly.



Lesson Outline

Objective: Students will create an animation with the illusion of a flying character.



IMAGINE
10 minutes

First, gather as a group to introduce the theme and spark ideas.



CREATE
40 minutes

Next, help students as they create a flying animation, working at their own pace through the tutorial.



SHARE
5 minutes

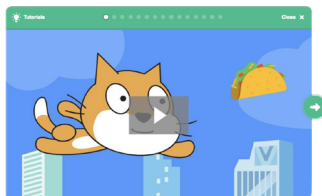
At the end of the session, gather together to share and reflect.

Get Ready for the Lesson

Use this checklist to prepare for the lesson.

Preview the Tutorial

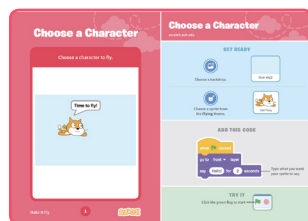
The *Make It Fly* tutorial shows students how to create their own projects. Preview the tutorial before your lesson and try the first few steps: scratch.mit.edu/fly



Print the Activity Cards (optional)

Print a few sets of *Make It Fly* cards to have available for students during the lesson.

scratch.mit.edu/fly/cards



Make sure students sign into their Scratch accounts

Have students sign into their own Scratch accounts at scratch.mit.edu.

Set up computers or laptops

Arrange computers so that students can work individually or in pairs.

Set up a computer with projector or large monitor

You can use a projector to show examples and demonstrate how to get started.

Imagine



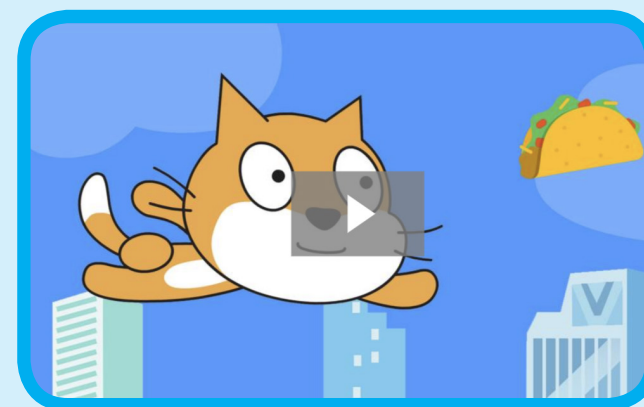
Begin by gathering the students to introduce the theme and spark ideas for projects.

Warm-up Activity: If I Could Fly...

Gather the group in a circle and ask, “If you could fly, where would you want to go?” Suggest that they close their eyes and imagine flying through their favorite place. Ask, “Where are you? What kinds of things do you see below you?” If there’s time, have each person say where they imagined flying or something they saw on their flight.

Provide Ideas and Inspiration

Show the introductory video for the *Make It Fly* tutorial. The video shows a variety of projects for ideas and inspiration.



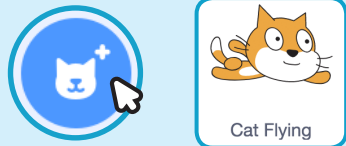
View at scratch.mit.edu/fly or vimeo.com/llk/fly

Demonstrate the First Steps



Demonstrate the first few steps of the tutorial so students can see how to get started.

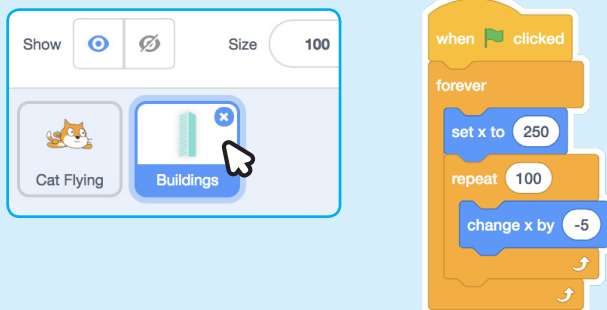
In Scratch, click Create.
Choose a flying sprite from the library:



Choose a new sprite for your character to fly past:



Make the building move across the stage to make your character look like it's flying:



Create



Support students as they make a flying animation.

Start with Prompts

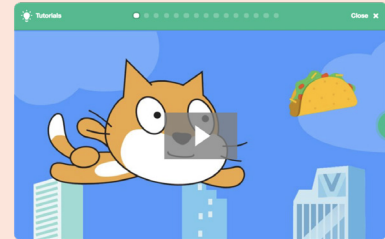
Ask students questions to get started

What character would you like to make fly?

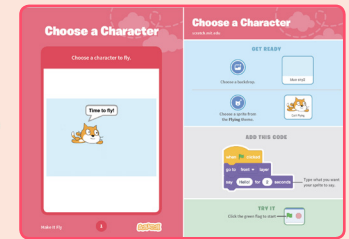
Where will your character go flying?

Provide Resources

Offer options for getting started



Some students may want to follow the online tutorial:
scratch.mit.edu/fly



Others may want to explore using the activity cards:
scratch.mit.edu/fly/cards

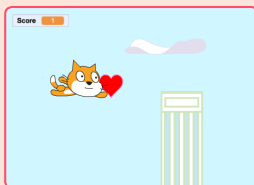
Suggest Ideas for Starting

- Choose a character
- Choose buildings or other scenery
- Make the character say something
- Make the scenery move



More Things to Try

- Switch costumes to change the scenery.
- Make your character move when you press a key.
- Add clouds and other floating objects.
- Score points when touching an object.



Encourage Debugging

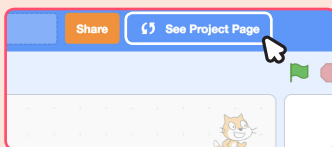
Here are some strategies to suggest to help students fix any bugs or difficulties they encounter:

- When stuck, talk out what you're working on with someone.
- Try out small bits of code at a time to figure out what's happening at each step.
- Look closely at the blocks on the tutorial or activity cards to see if they are the same or different from the blocks you're using.
- Remember that bugs always arise when creating a computer program. Debugging is a helpful skill to know not just in coding, but throughout life.

Prepare to Share

To add instructions and credits to a project, click the button: "See project page".

Give your project a title, add instructions and credits, then click Share.



Share



Share

Share projects with others in the room. Organize a flying character showcase. Ask half the room show their projects, while the others view them. Then switch.

Suggest that they ask each other questions, such as:

What do you like best about the project you made?

What might you like to change or make next?

What's Next?

Students can use the ideas and concepts from this lesson to create other projects. Here are a couple of variations on the flying character project you could suggest.



Flying Game

Make a game where you avoid some objects and try to catch others. Add or subtract points based on what your character touches.



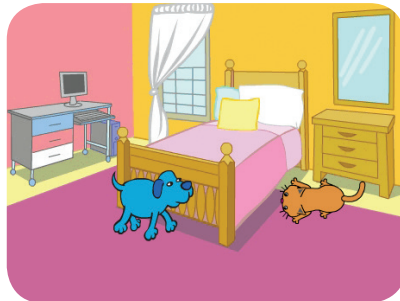
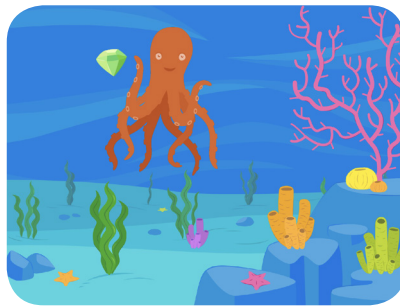
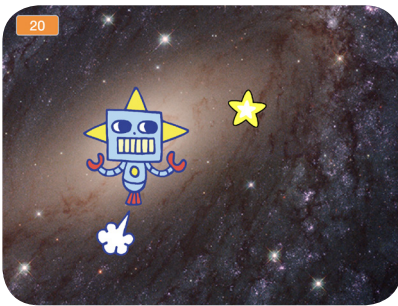
Flying Stories

Tell a story about your flying characters. You can record your voice and play sound clips. Or, use say blocks to make voice bubbles.

EDUCATOR GUIDE

Make a Chase Game

With this guide, you can plan and lead a 55-minute lesson using Scratch. Students will make a game that includes a variable to keep score.



Lesson Outline

Objective: Students will create a game using sensing.



IMAGINE
10 minutes

First, gather as a group to introduce the theme and spark ideas.



CREATE
40 minutes

Next, help students as they make chase games, working at their own pace through the tutorial.



SHARE
5 minutes

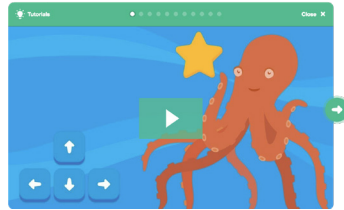
At the end of the session, gather together to share and reflect.

Get Ready for the Lesson

Use this checklist to prepare for the lesson.

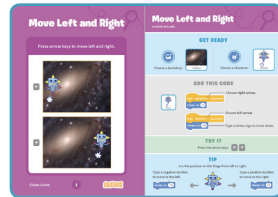
Preview the Tutorial

The *Make a Chase Game* tutorial shows students how to create their own projects. Preview the tutorial before your lesson and try the first few steps,



Print the Activity Cards (optional)

Print a few sets of *Chase Game* cards to have available for students during the lesson. You can download the cards at: scratch.mit.edu/ideas



Make sure students sign into their Scratch accounts

Have students sign into their own Scratch accounts at scratch.mit.edu.

Set up computers or laptops

Arrange computers so that students can work individually or in pairs.

Set up a computer with projector or large monitor

You can use a projector to show examples and demonstrate how to get started.

Imagine



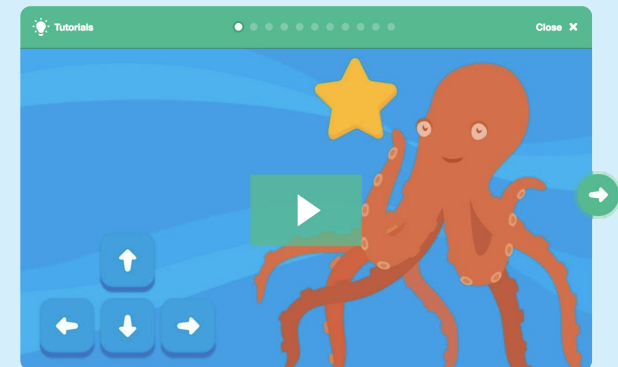
Begin by gathering the students to introduce the theme and spark ideas for projects.

Warm-up Activity: Imaginary Chase

Gather the students in a circle. Start by giving an example of one thing chasing another, such as “The dog is chasing the dinosaur.” The next person adds on, such as, “The dinosaur is chasing a donut.” The following person adds on by saying, “The donut is chasing a duck.” or whatever creature or object they choose. Continue until each person has added on to this imaginary game of chase.

Provide Ideas and Inspiration

To spark ideas, watch the *Make a Chase Game* video at the start of the tutorial.



View the video at scratch.mit.edu/chase

Demonstrate the First Steps



Demonstrate the first few steps of the tutorial so students can see how to get started.

Choose a backdrop.

Choose a Sprite, like Robot.

Make your sprite move right and left with arrow keys.

when **right arrow** key pressed

change x by **10**

Choose right arrow from the menu.

when **left arrow** key pressed

change x by **-10**

Choose left arrow from the menu.

Type a minus sign to move left.

Press the left arrow and right arrow keys on your keyboard to move.

Discuss next steps they can try, such as coding the sprite to move up and down and adding a sprite to chase.

Create



Support students as they create catch games. Suggest working in pairs.

Start with Prompts

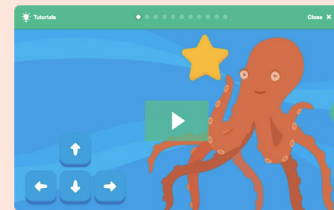
Ask students questions to get started

Which backdrop would you like to choose for your game?

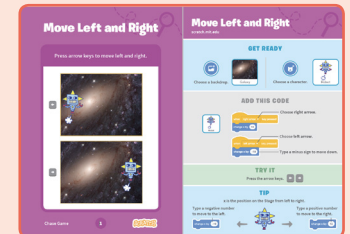
Who do you want as the main character in your game? What will it chase?

Provide Resources

Offer options for getting started



Some students may want to follow the online tutorial: scratch.mit.edu/chase



Others may want to explore using the printed cards: scratch.mit.edu/ideas

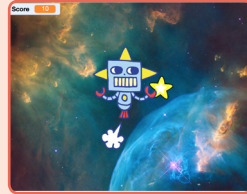
Suggest Ideas for Starting

- Choose a backdrop
- Choose or draw a main character
- Make it move with arrow keys.
- Select an object to chase.



More Things to Try

- Code the star or other sprite to chase
- Add a variable to keep score
- Add sounds
- Add a level
- Show a message when reaching the new level



Encourage Tinkering

- Encourage students to feel comfortable trying combinations of blocks and seeing what happens.
- Suggest students look inside other chase games to see the code.
- If they find code they like, they can drag the scripts or sprites into the backpack to reuse in their own project.

Prepare to Share

To add instructions and credits to a project, click the button: “*See project page*”.



Share

Have students share their projects with their neighbors.

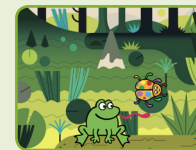
Ask questions that encourage reflection:

What do you like best about your game?

If you had more time, what would you add or change?

What's Next?

Chase Game projects provide an introduction to creating interactive games in Scratch. Here are a few ways that learners can build on the concepts they learned from this project.



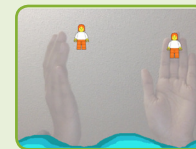
Add Obstacles

For a more complex game, add obstacles to avoid. Subtract points when you hit the obstacles.



Make a Two-Player Game

For an extra challenge, make a version of the game that allows two players to play.



Video Sensing

If the computers have a web camera attached or built-in, learners can make a game that they interact by moving their bodies. See the Video Sensing tutorial and educator guide for support.

Created by the Scratch Team

EDUCATOR GUIDE

Pong Game

With this guide, you can plan and lead a 55-minute lesson using Scratch. Students will gain experience with coding as they design a bouncing ball game.



Lesson Outline

Objective: Students will develop an interactive game using variables to keep score.



IMAGINE
10 minutes

First, gather as a group to introduce the theme and spark ideas.



CREATE
40 minutes

Next, help students as they make games, working at their own pace through the tutorial.



SHARE
5 minutes

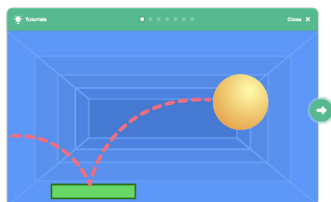
At the end of the session, gather together to share and reflect.

Get Ready for the Lesson

Use this checklist to prepare for the lesson.

Preview the Tutorial

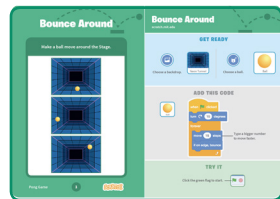
The *Pong Game* tutorial shows students how to create their own projects. Preview the tutorial before your lesson and try the first few steps: scratch.mit.edu/pong



Print the Activity Cards (optional)

Print a few sets of *Pong Game* cards to have available for students during the lesson.

scratch.mit.edu/ideas



Make sure students sign into their Scratch accounts

Have students sign into their own Scratch accounts at scratch.mit.edu.

Set up computers or laptops

Arrange computers so that students can work individually or in pairs.

Set up a computer with projector or large monitor

You can use a projector to show examples and demonstrate how to get started.

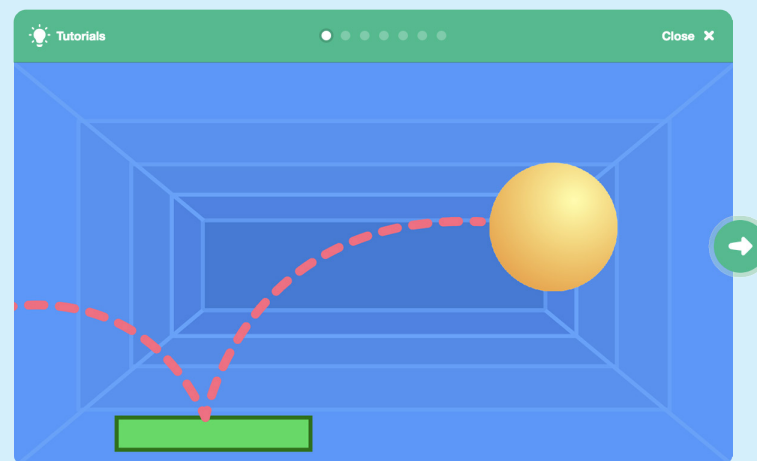
Imagine



Begin by gathering the students to introduce the theme and spark ideas for projects.

Provide Ideas and Inspiration

Show the introductory video for the *Pong Game* tutorial. The video shows pong games with a variety of themes, including everything from soccer to a magic potion-themed Pong game.



View at scratch.mit.edu/pong

Warm-up Activity: Bouncing Ideas

To get students thinking about a theme for their game, take turns calling out a theme, such as pizza pong or flower pong and brainstorming ideas for the type of images they could use to represent the theme.

Demonstrate the First Steps

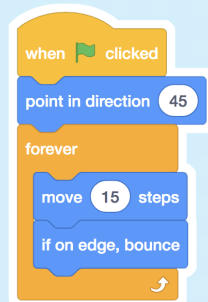


Demonstrate the first few steps of the tutorial so students can see how to get started.

Go to the Scratch website. Click Create. Choose a new backdrop:



Choose a ball sprite and make it bounce around:



Add a paddle sprite and control it with the mouse:



Create



Support students as they create pong games, on their own or in pairs.

Start with Prompts

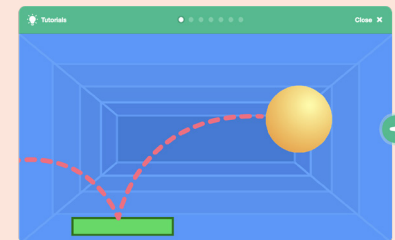
Ask students questions to get started

What background do you want for your game?

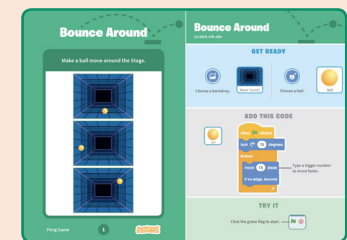
What color or type of ball?

Provide Resources

Offer options for getting started



Some participants may want to follow the online tutorial:
scratch.mit.edu/pong



Others may want to use the printed activity cards:
scratch.mit.edu/ideas

Suggest Ideas for Starting

- Choose a backdrop
- Choose or draw a ball sprite and make it bounce around
- Add a paddle sprite that you can control
- Make the ball bounce off the paddle



More Things to Try

- Add sounds and color effects
- Keep score by adding a variable
- Add a way to win or lose the game
- Change the backdrop when you reach a certain number of points
- Duplicate the ball for an added challenge



Offer strategies for problem solving

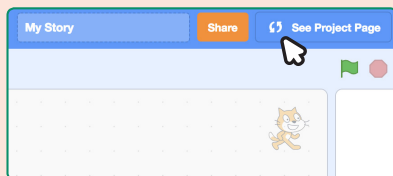
- Talk out what you're working on with someone
- Try out small bits of code at a time to figure out what's happening at each step
- Look closely at the blocks on the tutorial or activity cards to see if they are the same or different from the blocks you're using
- Look at the code for other pong games on the Scratch site



Prepare to Share

To add instructions and credits to a project, click the button: "See project page".

Then click the Share button if you want the project visible to others online.



Share

Have participants share their projects with others in the room.

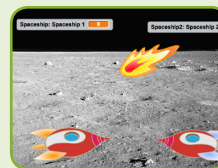
Ask questions to encourage reflection:

What did you notice about the games you tried?

What ideas might you add to your game?

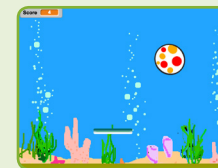
What's Next?

Here are a couple of other directions you could suggest:



Two-Player Game

For a more advanced project, try making a two-player game. To make a new version of your own project, click **File > Save as a Copy**.



Remix a Game

A different way to make a pong game is to remix someone else's project, adding images and ideas. Find a project to remix in the **Pong Game Studio**: scratch.mit.edu/studios/644508/ Click '**See inside**', then click the '**Remix**' button.

Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab.

EDUCATOR GUIDE

Create a Story

With this guide, you can plan and lead a 55-minute lesson using Scratch. Students will create a story with settings, characters, and dialogue.



Lesson Outline

Objective: Students will create an animated story between at least two characters.



IMAGINE
10 minutes

First, gather as a group to introduce the theme and spark ideas.



CREATE
40 minutes

Next, help students as they create story projects, working at their own pace through the tutorial.



SHARE
5 minutes

At the end of the session, gather together to share and reflect.

Get Ready for the Lesson

Use this checklist to prepare for the lesson.

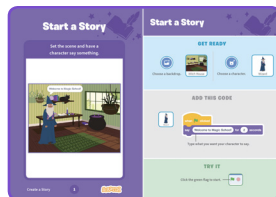
Preview the Tutorial

The *Create a Story* tutorial shows students how to create their own projects. Preview the tutorial before your lesson and try the first few steps: scratch.mit.edu/story



Print the Coding Cards (optional)

Print a few sets of *Create a Story* cards to have available for students during the lesson. You can download from this page: scratch.mit.edu/ideas



Make sure students sign into their Scratch accounts

Have students sign into their own Scratch accounts at scratch.mit.edu.

Set up a studio for project sharing on Scratch

Set up a studio so students will be able to add their projects. Go to your *My Stuff* page, then click the **+New Studio** button. Type in a name for the studio.

Set up computers or laptops

Arrange computers so that students can work individually or in pairs.

Imagine



Begin by gathering the students to introduce the theme and spark ideas for projects.

Warm-up Activity: Story Starters in a Bag

Have students make up a brief story by giving them a bag with three objects in it, and asking them to include all of the items in the story. In each bag, you could include small objects, pictures of animals or characters, and/or words (people, places, or things). Divide students into groups of two or three, and have each pick a bag. Give them a few minutes to come up with a quick story.

Provide Ideas and Inspiration

You can show the *Create a Story* tutorial video to show students how they can start making stories in Scratch.



View the video at: scratch.mit.edu/story

Demonstrate the First Steps



Demonstrate the first few steps of the tutorial so students can see how to get started.

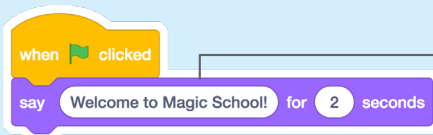
In Scratch, click Create.
Choose a backdrop.



Choose any character (in Scratch called a *sprite*).



Code your character to say something.



Type what you want
your character to say.

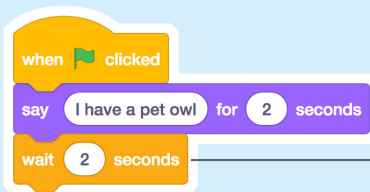
Click the green flag to start.



Add another character.



Add code to the new character.



Use this block to have the
second character wait
before they say something.

Create



Support students as they create Story projects, on their own or in pairs.

Start with Prompts

Ask students questions to get started

Where will your
story take place?

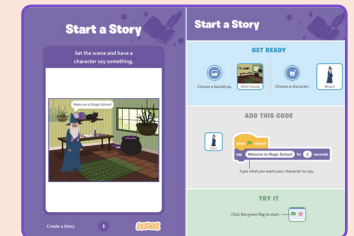
What will
happen first?

Provide Resources

Offer options for getting started



Some students may want to
follow the online tutorial:
scratch.mit.edu/story



Others may want to explore
using the coding cards:
scratch.mit.edu/ideas

Suggest Ideas for Starting

- Choose a backdrop.
- Choose a character.
- Make a character say something
- Make a character hide and show.



More Things to Try

- Switch backdrops.
- Make your characters have a conversation.
- Move your characters.
- Change something when you click on it.



Support Tinkering

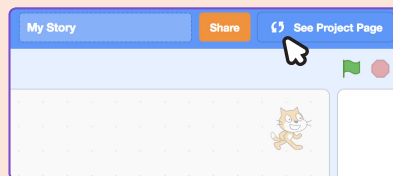
Scratch is designed to support creating by experimenting and tinkering. So, your students may want to start their stories without planning beforehand. As they create, one idea can spark another. Celebrate their sparks of creativity and the unexpected turns their stories may take.



Prepare to Share

To add instructions and credits to a project, click the button: “See project page”.

Then click the Share button if you want the project visible to others online.



Share

Help the students add their projects to a shared studio in Scratch. Give them a link to the studio. Then they can click ‘Add Projects’ at the bottom of the page.

Ask for volunteers to show their project to the group.

What’s Next?

Students can use these ideas and concepts to create a variety of projects. Here are some variations on the story project you could suggest:



Retell a story

Start with a story you know and make it in Scratch. Imagine a new ending or a different setting.



Neighbourhood story

Take photos of your classroom, school, or neighborhood and use them as backdrops in your story.



Round-robin story

Give everyone 5 minutes to start a story. Then, have them switch to the next computer to add to the story. Repeat.

Created by the Scratch Team

Please encourage your students and their families to attend a Scratch Community Event.

Students will be able to show off their projects to their families and families will work together to create something special in Scratch.

This guide was compiled using materials/resources created by Scratch.

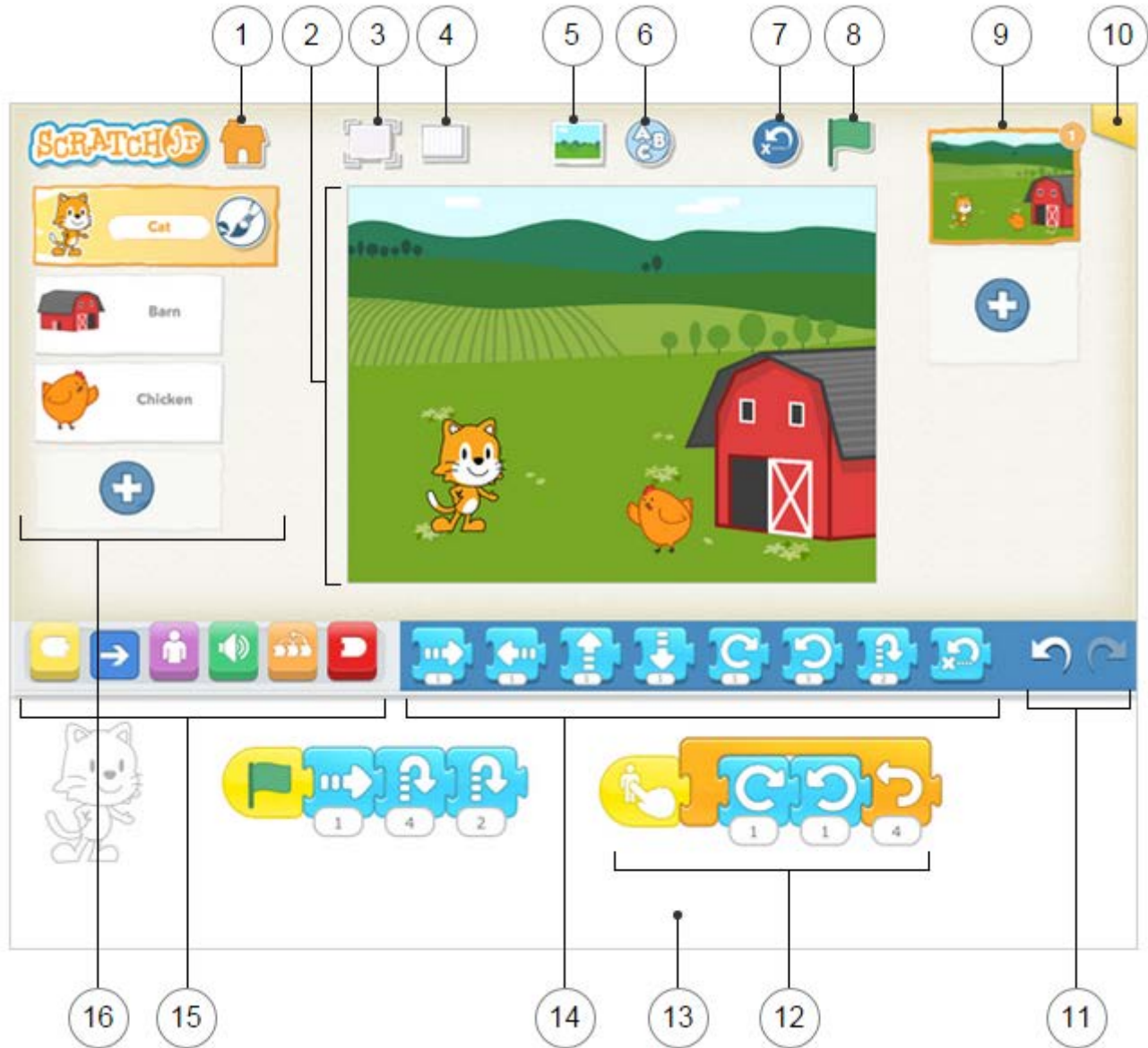


Educator's Guide

Classroom activities for students in grades K-2



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Interface Guide

- 1 Save**
Save the current project and exit to the Home page.
- 2 Stage**
This is where the action takes place in the project. To delete a character, press and hold it.
- 3 Presentation Mode**
Expand the stage to the full screen.
- 4 Grid**
Toggle on (and off) the x-y coordinate grid.
- 5 Change Background**
Select or create a background image for the stage.
- 6 Add Text**
Write titles and labels on the stage.
- 7 Reset Characters**
Reset all characters to their starting positions on the stage. (Drag characters to set up new starting positions.)
- 8 Green Flag**
Start all programming scripts that begin with a "Start on Green Flag" block by tapping here.
- 9 Pages**
Select among the pages in your project -- or tap the plus sign to add a new page. Each page has its own set of characters and a background. To delete a page, press and hold it. To reorder pages, drag them to new positions.
- 10 Project Information**
Change the title of the project and see when the project was created.
- 11 Undo and Redo**
If you make a mistake, tap Undo to go back in time, reversing the last action. Tap Redo to reverse the last Undo.
- 12 Programming Script**
Snap blocks together to make a programming script, telling the character what to do. Tap anywhere on a script to make it run. To delete a block or script, drag it outside the programming area. To copy a block or script from one character to another, drag it onto the character's thumbnail.





Interface Guide

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Programming Area

This is where you connect programming blocks to create scripts

14

Blocks Palette

This is the menu of programming blocks. Drag a block into the programming area, then tap on it to see what it does.

15

Block Categories

This is where you can select a category of programming blocks:

Triggering Blocks (Yellow), Motion (Blue), Looks (Purple), Sounds (Green), Control (Orange), End Blocks (Red).

16

Characters

Select among the characters in your project -- or tap the plus sign to add a new one. Once a character is selected, you can edit its scripts, tap its name to rename it, or tap the paintbrush to edit its image. To delete a character, press and hold it. To copy a character to another page, drag it to the page thumbnail.



TRIGGERING BLOCKS

Start on Green Flag



Starts the script when the Green Flag is tapped.

Start on Tap



Starts the script when you tap on the character.

Start on Bump



Starts the script when the character is touched by another character.

Start on Message



Starts the script whenever a message of the specified color is sent.

Send Message



Sends a message of the specified color.

MOTION BLOCKS

Move Right



Moves the character a specified number of grid squares to the right.

Move Left



Moves the character a specified number of grid squares to the left.

Move Up



Moves the character a specified number of grid squares up.

Move Down



Moves the character a specified number of grid squares down.

Turn Right



Rotates the character clockwise a specified amount. Turn 12 for a full rotation.

Turn Left



Rotates the character counterclockwise a specified amount. Turn 12 for a full rotation.





Block Descriptions

Hop



Moves the character up a specified number of grid squares and then down again.

Go Home



Resets the character's location to its starting position. (To set a new starting position, drag the character to the location.)

LOOKS BLOCKS

Say



Shows a specified message in a speech bubble above the character.

Grow



Increases the character's size.

Shrink



Decreases the character's size.

Reset Size



Returns the character to its default size.

Hide



Fades out the character until it is invisible.

Show



Fades in the character until it is fully visible.

SOUND BLOCKS

Pop



Plays a "Pop" Sound

Play Recorded Sound



Plays a sound recorded by the user.



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CONTROL BLOCKS

Wait



Pauses the script for a specified amount of time (in tenths of seconds).

Set Speed



Changes the rate at which certain blocks are run.

Stop



Stops all the characters' scripts.

Repeat



Runs the blocks inside a specified number of times.

END BLOCKS

End



Indicates the end of the script (but does not affect the script in any way).

Go to Page

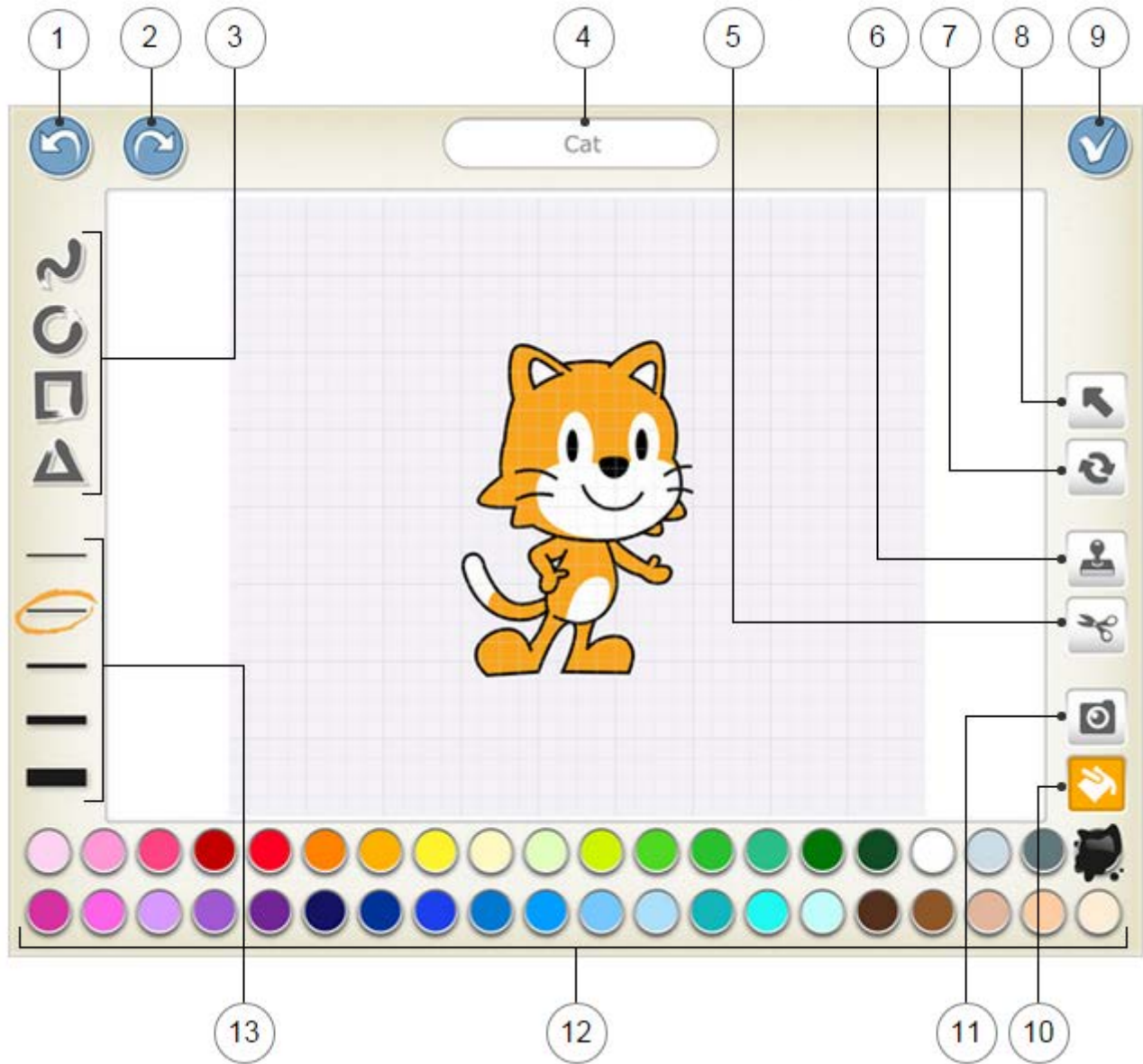


Changes to the specified page of the project.

Repeat Forever



Runs the script over and over.





Activities and Resources

Teachers please have your students complete the 5 activities listed below prior to the event at your school.

Activities - <https://www.scratchjr.org/teach/activities>

- 1 **Drive Across the City & Run a Race**
- 2 **Sunset & Moonrise after Sunset**
- 3 **Spooky Forest & Dribble a Basketball**
- 4 **Dance Party**
- 5 **Meet and Greet**

Resources

Resources - <https://www.scratchjr.org/teach/resources>

Tips & hints - <https://www.scratchjr.org/learn/tips>

Getting started - <https://sites.google.com/tldsb.on.ca/coding/scratchjr>

Download Scratch Jr. - <https://www.youtube.com/watch?v=4dy6imziG-c>

This guide was compiled using materials/resources created by Scratch.



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