EDUCATOR GUIDE

Animate Your Name

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will gain experience with coding as they animate the letters in their name.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they animate their names, working at their own pace.
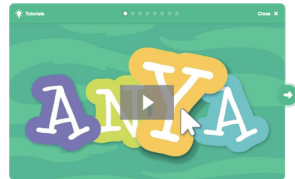
SHARE
10 minutes

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

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The Animate Your Name tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps: **scratch.mit.edu/name**

☐ **Print the Activity Cards**

Print a few sets of Animate Your Name cards to have available for participants during the workshop. **scratch.mit.edu/ideas**
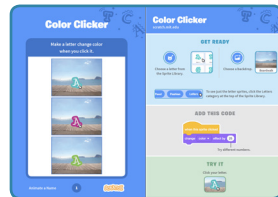
☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up computers or laptops**

Arrange computers so that participants 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

IMAGINE

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

Warm-up Activity: Letter Shapes

Gather the group in a circle. Ask each participant to say their name, and then have everyone in the group act out the shape of the first letter.

Provide Ideas and Inspiration

Show the introductory video for the Animate Your Name tutorial. The video shows a variety of projects for ideas and inspiration.
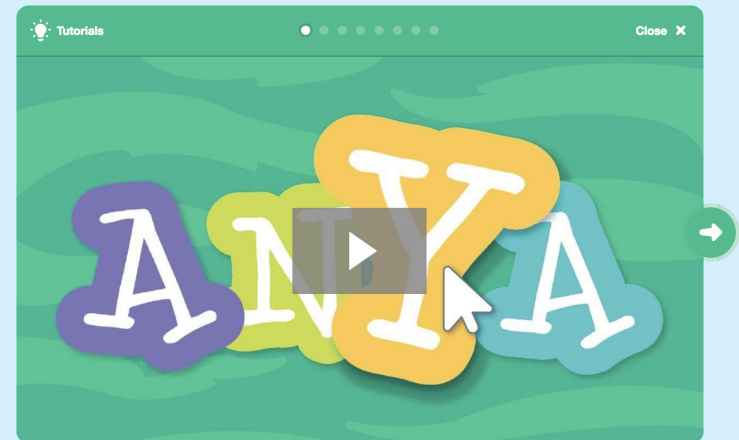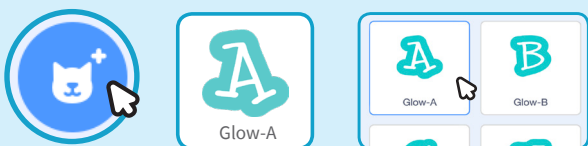
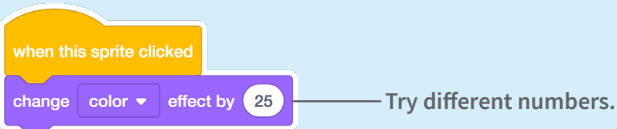View at **scratch.mit.edu/name** or **vimeo.com/llk/name**

Demonstrate the First Steps

IMAGINE

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

In Scratch, click Create.
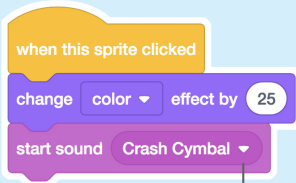**Choose a letter from the Sprite Library:**

Glow-A   Glow-A   Glow-B

Make it do something:

when this sprite clicked
change color effect by 25 — Try different numbers.

Add a sound:

🔊 Sounds

Click the Sounds tab.

when this sprite clicked
change color effect by 25
start sound Crash Cymbal ▾

Choose a sound.   **Choose your sound from the menu.**

Choose a new backdrop:

Boardwalk
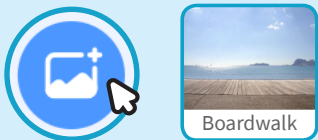
Create

CREATE

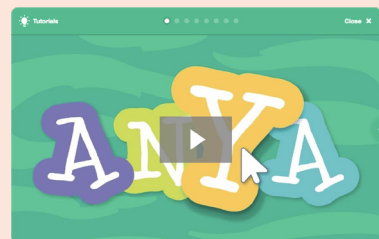Support participants as they create interactive name projects.

Start with Prompts
Ask participants questions to get started

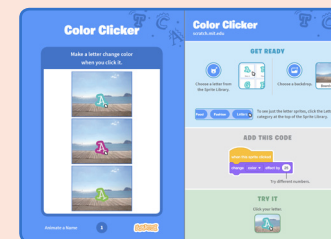*Do you want to animate your name, initials, or username?*

Which letter do you want to start with?

Provide Resources
Offer options for getting started

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

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

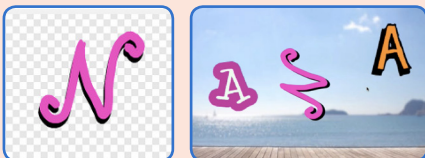**Suggest Ideas for Starting**

• Choose a letter
• Make it change color

• Add a sound
• Add a backdrop
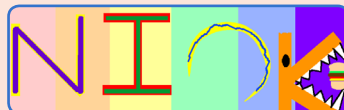
CREATE

More Things to Try

- Draw a letter
- Make it spin
- Make it glide
- Change size

Add more letters and motion!

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

Help participants feel comfortable trying different combinations of blocks and seeing what happens.
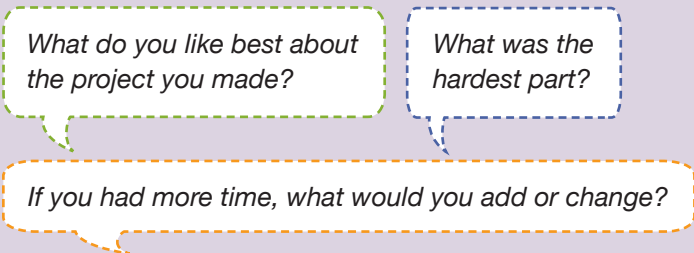
To understand their thought process, you can ask questions:
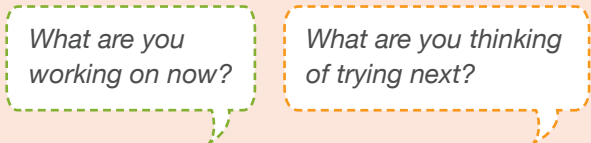
What are you working on now?

What are you thinking of trying next?

Share

SHARE

Have participants 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?

Participants can use the ideas and concepts from this workshop to create a wide variety of projects. Here are a few variations on the animated name project you could suggest.

Other Names

Animate the name of a favorite character from a book or movie. Or, animate the letters of the name of your school or town.

Start with an Image

Have participants bring in a picture (or find a picture on the web) and animate a word that goes with the picture.

Acrostics

Make an interactive acrostic (a poem in which the first letters of each line spell out a word reading down).

EDUCATOR GUIDE

Imagine a World

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will gain experience with coding as they create projects based on the theme *Imagine a World*.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they create projects, working at their own pace.

SHARE
10 minutes

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

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The Imagine a World tutorial shows participants how to create their own projects. Preview the tutorial by opening Scratch, clicking Create, then Tutorials. Choose the Imagine a World tutorial from the library.
scratch.mit.edu/imagine

Imagine a World

☐ **Imagine a World Coding Cards**

If you have access to a printer, print the *Imagin a World* cards for students to use. Download the PDF at:
scratch.mit.edu/ideas

☐ **Set up your workspace**

Creating with Scratch is collaborative. Arrange your space so participants can work in groups or pairs.

If you have a projector or large monitor, use it to view the *Imagine a World* video together, show examples and demonstrate how to get started.
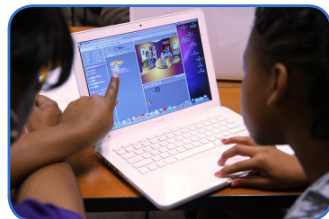
Imagine

IMAGINE

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

Warm-up Activity: Imagine a world...

Gather the group in a circle. Start with the prompt "Imagine a world where…" and have each participant share their name and one thing they imagine in their world.

This activity can be playful, or it can be more focused on social or environmental issues. Set the tone by starting off the activity. For example, "My name is Maya and I imagine a world where everyone can fly," or, "My name is Devon and I imagine a world where no one goes hungry."

Provide Ideas and Inspiration

Participants can create a wide range of projects with the Imagine a World tutorial. To spark ideas, watch the Imagine a World video together.
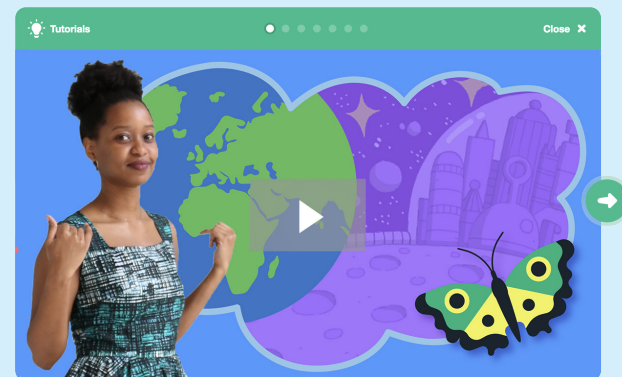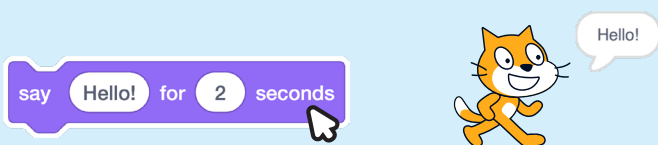
scratch.mit.edu/imagine

Demonstrate the First Steps

IMAGINE

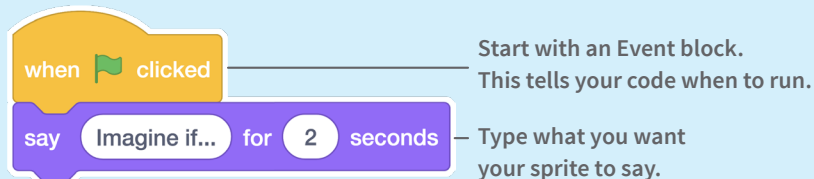Demonstrate the first few steps of the tutorial so participants can see how to get started.

In Scratch, click Create.
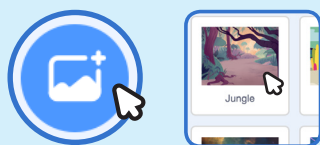**Drag out a say block, and click it to make the cat say hello!**

say Hello! for 2 seconds

Hello!

Have participants choose their own sprite.

Ruby   Sam

Wizard Girl   Wizard-toad

Wizard Girl

Now make it say something.

when 🏳 clicked

say Imagine if... for 2 seconds

Start with an Event block. This tells your code when to run.

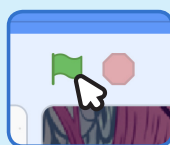Type what you want your sprite to say.

Next, choose a backdrop.

Jungle

Click the green flag to start.

Click the green flag to run your code.

Create

CREATE

Support participants as they create projects based on their ideas.

Start with Prompts
Ask participants questions to get started

What does your ideal world look like?
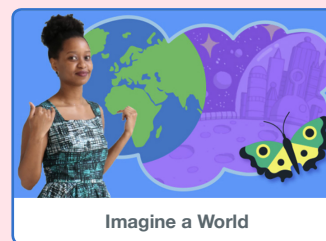
What could you do to help make our world a little better?

Who or what inhabits your world?

Is it full of people, animals, or creatures?

Provide Resources
Offer options for getting started

Imagine a World

3.0
Imagine If

Imagine If Cards

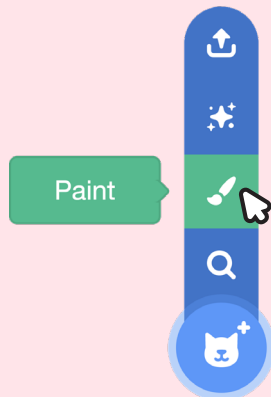Some participants may want to follow the online tutorial: **scratch.mit.edu/imagine**

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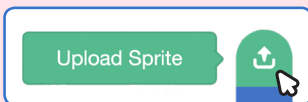
CREATE

More Things to Try

- It's your world. To draw your own images, click the Add a Sprite button, then choose Paint.
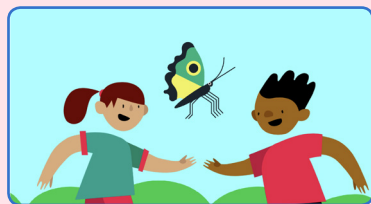
Paint

- You can also upload a photo

Upload Sprite

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

Help participants feel comfortable experimenting with blocks. Encourage them to try different combinations and edit inputs.

What happens when you add a repeat loop?

What happens if you type a larger or smaller number?

SHARE

Share

Have participants 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?

Participants can use the ideas and concepts from this workshop to create a wide variety of projects. Here are a few project ideas you could suggest:

Games for Change

Make a game with a positive outcome. The goal of your game could be something like cleaning up a local park, or spreading kindness.
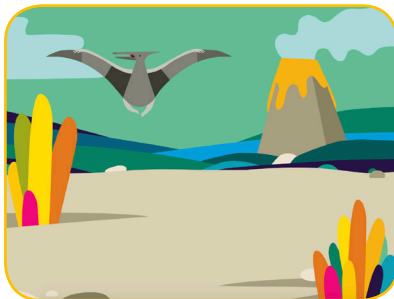
How-to Guides

Create an animated tutorial or guide that shows something you know how to do. Design it for someone you know or to share with your community.

EDUCATOR GUIDE

Animate a Character

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will gain experience with coding as they bring characters to life with animation.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they animate characters, working at their own pace.

SHARE
10 minutes

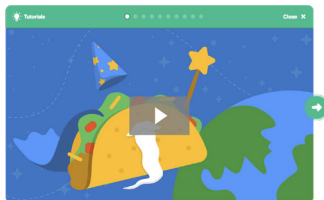At the end of the session, gather together to share and reflect.

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

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

☐ **Print the Activity Cards**

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

☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up computers or laptops**

Arrange computers so that participants 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

IMAGINE

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

Warm-up Activity: Favorite Characters

Gather the group in a circle. Ask each participant 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.
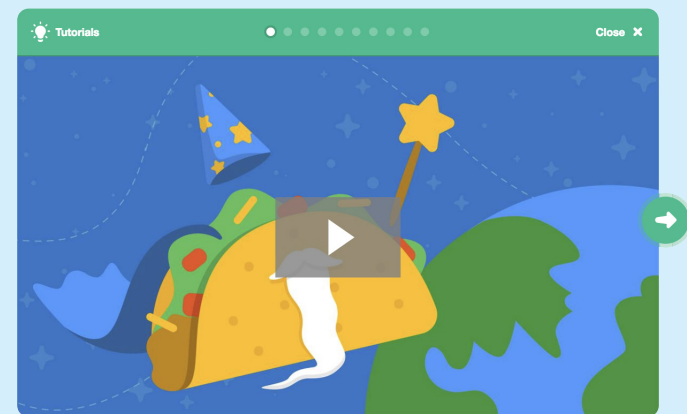
View the **scratch.mit.edu/ideas**

Demonstrate the First Steps

IMAGINE

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

Choose a backdrop.

Soccer 2

Choose a character to animate.

Pico Walking

Make your sprite move right and left with arrow keys:

when [right arrow ▼] key pressed
change x by (10)

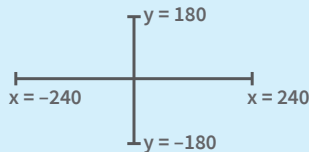Choose **right arrow** from the menu.

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 participants figure out how to move sprites around the stage.

y = 180

x = –240   x = 240

y = –180

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

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

Create

CREATE

Support participants as they create animated Scratch projects.
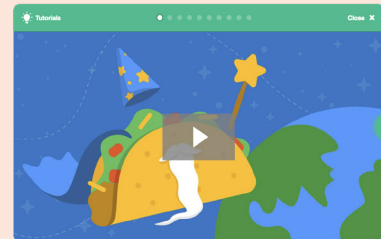
Start with Prompts
Ask participants questions to get started

Which character would you like to animate?

What do you want your character to do?

Provide Resources
Offer options for getting started

Some participants 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.

CREATE

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

SHARE

Have participants 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?

Participants can use the ideas and concepts from this workshop to create a wide variety of projects. Encourage them to continue developing their projects into games, stories or interactive art with the resources listed below.
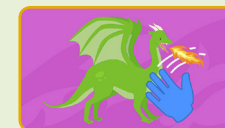
Create a Story

Choose characters, add conversation, and bring your story to life.

Chase Game

Make a game where you chase a character to score points.

Video Sensing

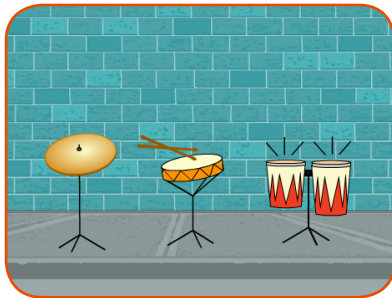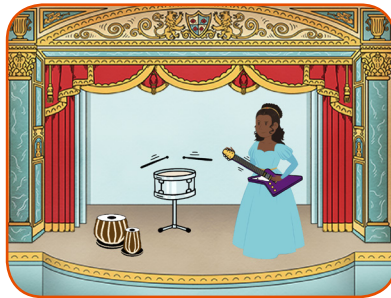Interact with characters and objects in Scratch with video sensing.

Find these projects in the Tutorials library: **scratch.mit.edu/ideas**

Created by the Scratch Team

EDUCATOR GUIDE

Make Music

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will choose instruments, add sounds, and press keys to play music.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they create musical projects, working at their own pace.

SHARE
10 minutes

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

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The *Make Music* tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps: **scratch.mit.edu/tutorials**
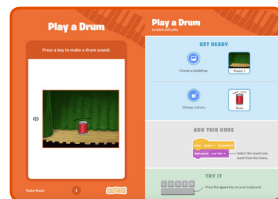
☐ **Print the Activity Cards**

Print a few sets of *Make Music* cards to have available for participants during the workshop. **scratch.mit.edu/ideas**

☐ **Make sure participants have Scratch accounts**

☐ **Check sound on computers or laptops**

Check to make sure that the sound output is working on the computers or laptops. You may want to make headphones available (including headphone splitters to allow participants to listen together).

☐ **Check microphone if recording sounds (optional)**

For the optional step of recording sounds, see if the computers have a microphone (sound input) turned on or added. Tip: To record sounds in Scratch, participants will need to check "Allow" to give Scratch access to the microphone:

Imagine

IMAGINE

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

Warm-up Activity: Repeat a Rhythm

Gather the group in a circle and get ready to make music. Take turns tapping or clapping a short rhythm, then have the group repeat it back.

Provide Ideas and Inspiration

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

View at **scratch.mit.edu/music**

Demonstrate the First Steps

IMAGINE

Demonstrate the first few steps of the tutorial so participants can see how to get started.
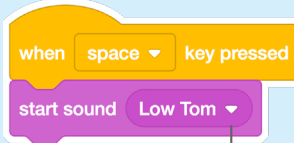
In Scratch, choose a new sprite and select a drum from the Music theme.
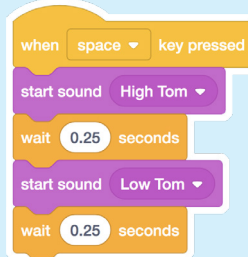
Choose a drum.

Drum

Make the drum play a sound when you press a key:

```
when space key pressed
start sound Low Tom
```

Select the sound you want from the menu.

Make it play a rhythm:

```
when space key pressed
start sound High Tom
wait 0.25 seconds
start sound Low Tom
wait 0.25 seconds
```

Choose another instrument from the music theme and make it play a note.

Saxophone
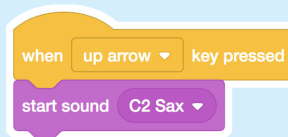
```
when up arrow key pressed
start sound C2 Sax
```

Create

CREATE

Support participants as they create musical projects, on their own or in pairs.

Start with Prompts
Ask participants questions to get started

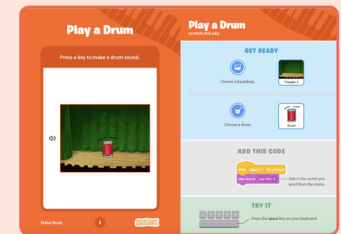*Which instruments or sounds do you want to try first?*

What kind of rhythms or musical patterns can you make?

Provide Resources
Offer options for getting started

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

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

Suggest Ideas for Starting

• Choose a drum or other instrument
• Press a key to play a sound
• Create a rhythm
• Try changing the rhythm

More Things to Try

- Add musical instruments
- Play with musical patterns
- Play a random note or sound
- Add animation
- Use beatbox sounds in a loop
- Record short sounds to play

Keep going! Expanding and enhancing projects

Check in with participants as they work and offer support to take their projects further.

- Suggest that participants experiment with new instruments and ways of adding sound to their projects.
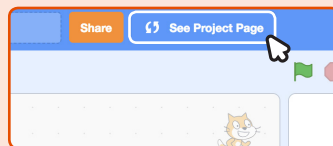- Get inspired by someone else's project: What have they tried? What variations might you try?
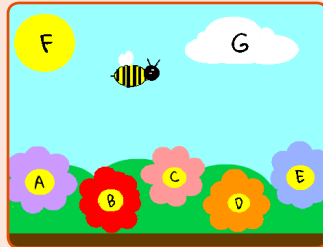
Prepare to Share

Suggest adding instructions so others know how to play the project, such as which keys to press.

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

Have participants walk around the room to see and listen to each others' musical projects on their computers or laptops.
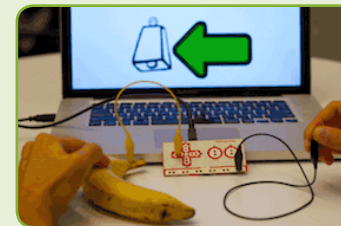
Reflect as a group:

What do you like best about the project you made or heard?"

What else might you like to add?

What's Next?

Scratch + Makey Makey

If you have access to Makey Makey boards (makeymakey.com), you can connect a Scratch project to the physical world. Participants can interact with their musical projects using coins, clay, cardboard, and more.

To learn how to use Makey Makey with Scratch, see scratch.mit.edu/makeydrum or scratch.mit.edu/makeypiano

EDUCATOR GUIDE

Create a Story

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will create a story with settings, characters, and dialogue.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they create story projects, working at their own pace.

SHARE
10 minutes

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

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

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

☐ **Print the Coding Cards**

Print a few sets of *Create a Story* cards to have available for participants during the workshop. You can download from this page: **scratch.mit.edu/ideas**
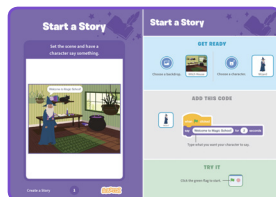
☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up a studio for project sharing on Scratch**

Set up a studio so participants 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 participants can work individually or in pairs.

Imagine

IMAGINE

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

Warm-up Activity: Story Starters in a Bag

Have participants 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 participants 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 participants how they can start making stories in Scratch.

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

Demonstrate the First Steps

IMAGINE

Demonstrate the first few steps of the tutorial so participants can see how to get started.
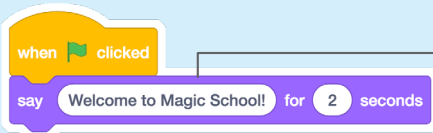
In Scratch, click Create. Choose a backdrop.

Witch House

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

Wizard

Code your character to say something.

when 🏳 clicked
say Welcome to Magic School! for 2 seconds

Type what you want your character to say.

Click the green flag to start.

Add another character.

Witch

Add code to the new character.

when 🏳 clicked
say I have a pet owl for 2 seconds
wait 2 seconds
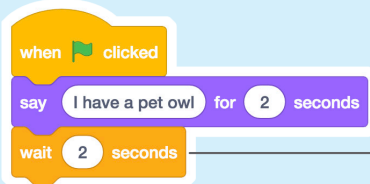
Use this block to have the second character wait before they say something.

Create

CREATE

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

Start with Prompts
Ask participants questions to get started

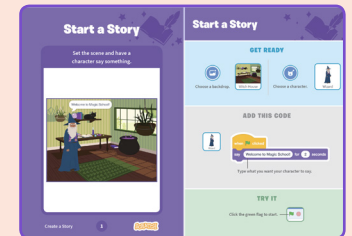*Where will your story take place?*

What will happen first?

Provide Resources
Offer options for getting started

Some participants 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.

CREATE

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 participants 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.
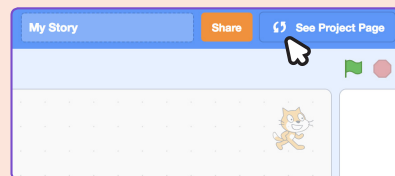
Share

SHARE

Help the participants 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?

Participants 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.
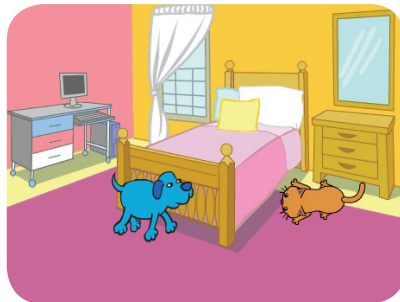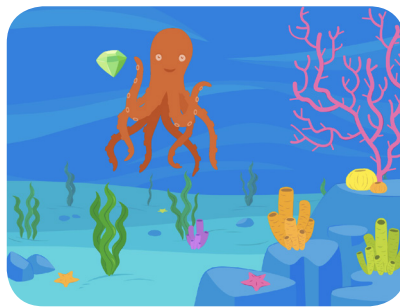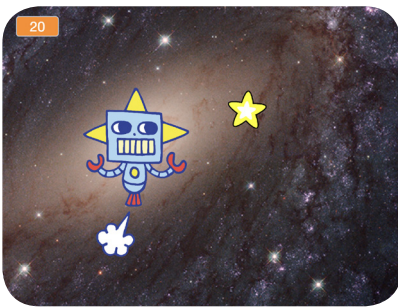

Round-robin story

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

EDUCATOR GUIDE

Make a Chase Game

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will make a game that includes a variable to keep score.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they make chase games, working at their own pace.

SHARE
10 minutes

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

Get Ready for the Workshop
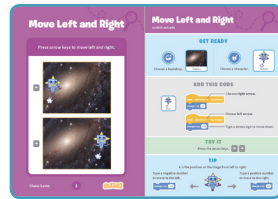
Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The *Make a Chase Game* tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps,
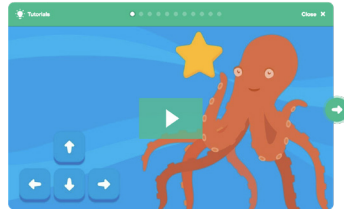
☐ **Print the Activity Cards**

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

☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up computers or laptops**

Arrange computers so that participants 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

IMAGINE

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

Warm-up Activity: Imaginary Chase

Gather the participants 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

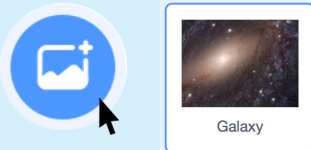To spark ideas, watch the Make a Chase Game video at the start of the tutorial.
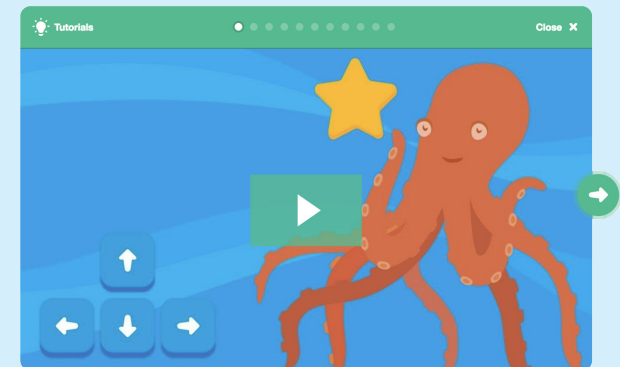
View the video at   **scratch.mit.edu/chase**

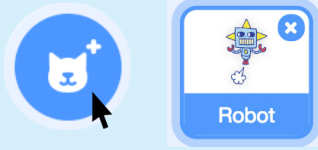# Demonstrate the First Steps

IMAGINE

Demonstrate the first few steps of the tutorial so participants can see how to get started.
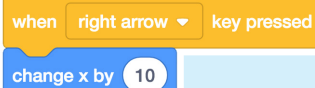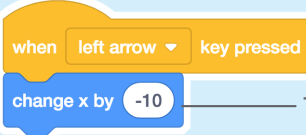
Choose a backdrop.

Galaxy

Choose a sprite, like Robot.

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.

↑ ↓

Star

Create

CREATE

Support participants as they create catch games. Suggest working in pairs.
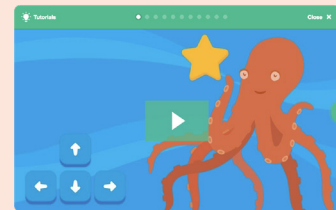
Start with Prompts
Ask participants questions to get started

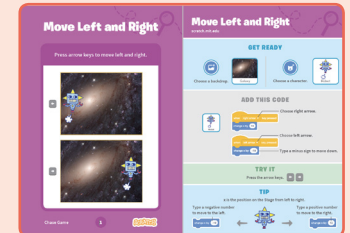*Which backdrop would you like to choose for your game?*

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

Provide Resources
Offer options for getting started

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

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

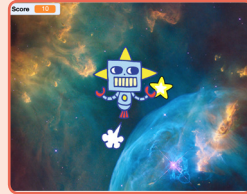### Suggest Ideas for Starting

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

CREATE

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 participants to feel comfortable trying combinations of blocks and seeing what happens.
- Suggest participants 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"*.

↩ See project page

Share

SHARE

Have participants share their projects with their neighbors.

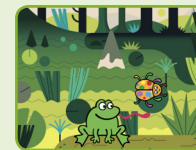**Ask questions that encourage reflection:**

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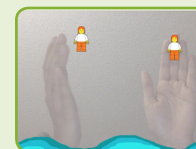
Add Obstacles
For a more complex game, add obstacles to avoid. Subtract points when you hit the obstacles.

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.
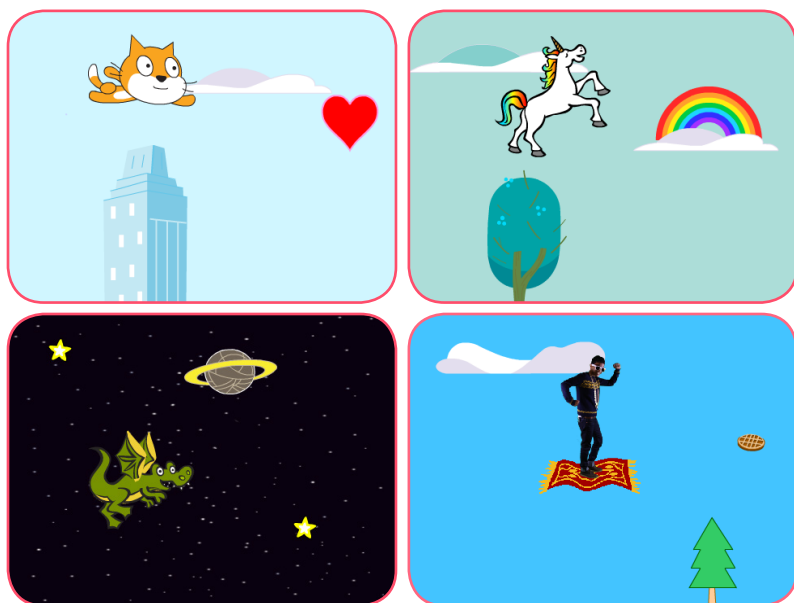
Created by the Scratch Team

EDUCATOR GUIDE

Make It Fly

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will choose a character and program it to fly.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they create a flying animation, working at their own pace.

SHARE
10 minutes

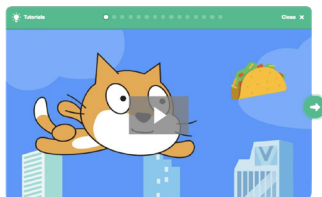At the end of the session, gather together to share and reflect.

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The *Make It Fly* tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps: **scratch.mit.edu/fly**
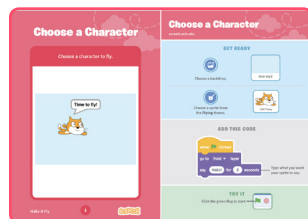
☐ **Print the Activity Cards**

Print a few sets of *Make It Fly* cards to have available for participants during the workshop. **scratch.mit.edu/ideas**

☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up computers or laptops**

Arrange computers so that participants 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

IMAGINE

Begin by gathering the participants 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.
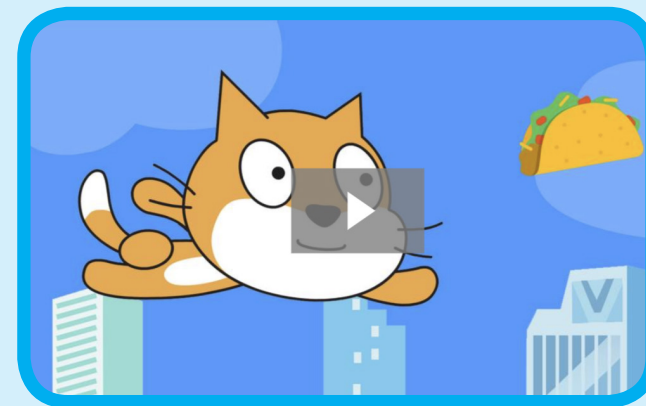
View at **scratch.mit.edu/fly**

Demonstrate the First Steps

IMAGINE

Demonstrate the first few steps of the tutorial so participants can see how to get started.
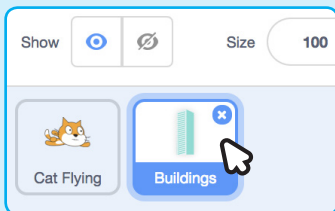
In Scratch, click Create.
Choose a flying sprite from the library:

Cat Flying

Choose a new sprite for your character to fly past:

Buildings

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

Show   Size 100

Cat Flying   Buildings

```
when [flag] clicked
forever
  set x to 250
  repeat 100
    change x by -5
```

Create

CREATE

Support participants as they make a flying animation.
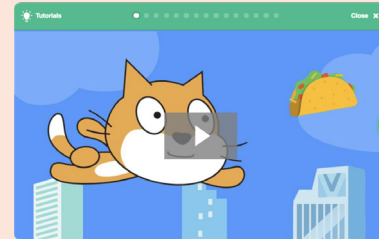
Start with Prompts
Ask participants questions to get started

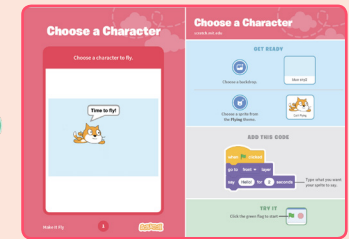*What character would you like to make fly?*

Where will your character go flying?

Provide Resources
Offer options for getting started

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

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

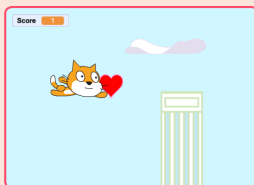**Suggest Ideas for Starting**

• Choose a character
• Make the character say something

• Choose buildings or other scenery
• Make the scenery move

CREATE

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 participants 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.
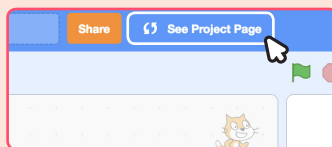
Share

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?

Participants can use the ideas and concepts from this workshop 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

Pong Game

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will gain experience with coding as they design a bouncing ball game.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they make games, working at their own pace.

SHARE
10 minutes

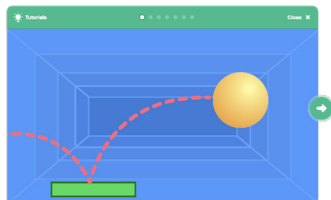At the end of the session, gather together to share and reflect.

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The *Pong Game* tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps: **scratch.mit.edu/pong**
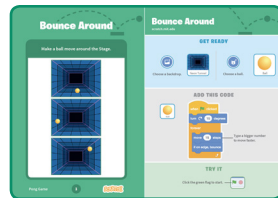
☐ **Print the Activity Cards**

Print a few sets of *Pong Game* cards to have available for participants during the workshop. **scratch.mit.edu/ideas**

☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up computers or laptops**

Arrange computers so that participants 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

IMAGINE

Begin by gathering the participants 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.
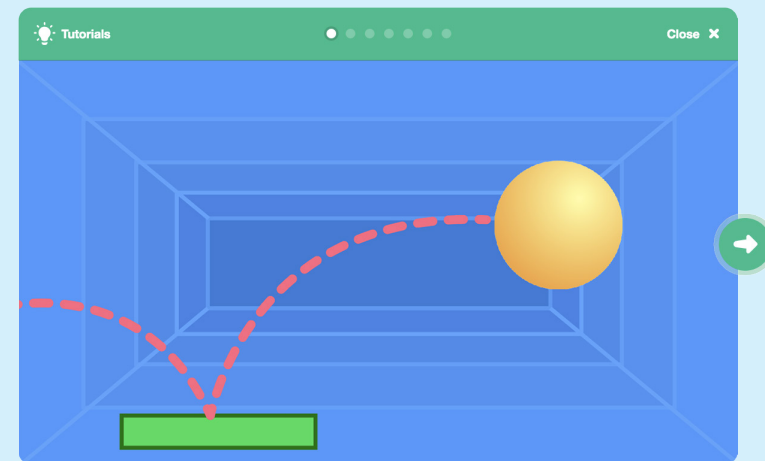
View at **scratch.mit.edu/pong**

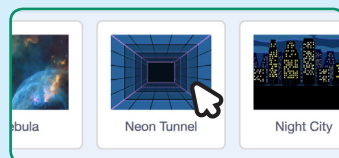**Warm-up Activity: Bouncing Ideas**

To get participants 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.
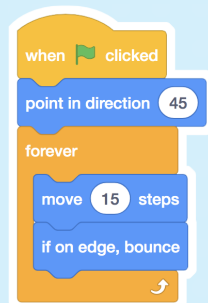
Demonstrate the First Steps

IMAGINE

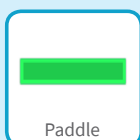Demonstrate the first few steps of the tutorial so participants can see how to get started.

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

Neon Tunnel

ebula · Neon Tunnel · Night City

Choose a ball sprite and make it bounce around:

Ball

```
when [flag] clicked
point in direction 45
forever
    move 15 steps
    if on edge, bounce
```

Add a paddle sprite and control it with the mouse:

Paddle

```
when [flag] clicked
forever
    set x to mouse x
```

Create

CREATE

Support participants as they create pong games, on their own or in pairs.
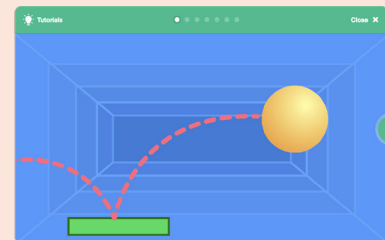
Start with Prompts
Ask participants questions to get started

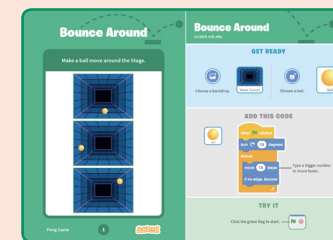*What background do you want for your game?*

What color or type of ball?

Provide Resources
Offer options for getting started

Some particpants 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.
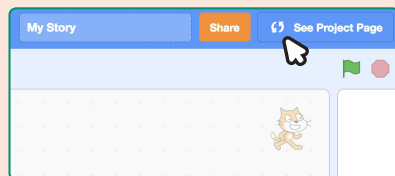
Share

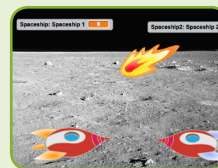Have particpants share their projects with others in the room.

Ask questions to encourage reflection:

What did you notice about the games you tried?
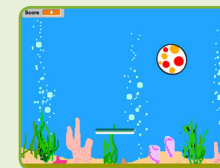
What ideas might you add to your game?

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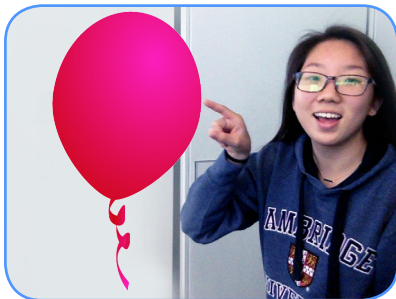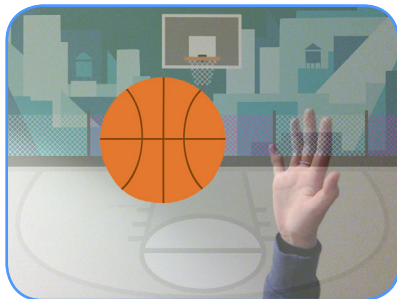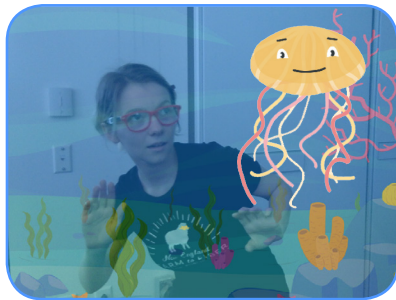
Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab.

EDUCATOR GUIDE

Video Sensing

With this guide, you can plan and lead a one-hour workshop using Scratch. Participants will gain experience with coding as they create interactive projects using Video Sensing.

Workshop Overview

Here's a suggested agenda for a one-hour workshop:

IMAGINE
10 minutes

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

CREATE
40 minutes

Next, help participants as they make interactive projects, working at their own pace.
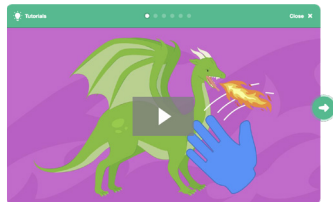
SHARE
10 minutes

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

Get Ready for the Workshop

Use this checklist to prepare for the workshop.

☐ **Preview the Tutorial**

The *Video Sensing* tutorial shows participants how to create their own projects. Preview the tutorial before your workshop and try the first few steps: **scratch.mit.edu/tutorials**
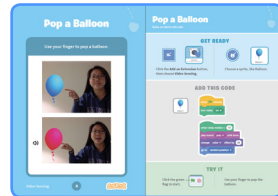

☐ **Make sure your computers have built-in cameras**

Video Sensing uses your computer's built-in camera. Make sure that participants are using computers with built-in cameras.

☐ **Print the Activity Cards**

Print a few sets of *Video Sensing* cards to have available for participants during the workshop. **scratch.mit.edu/ideas**

☐ **Make sure participants have Scratch accounts**

Participants can sign up for their own Scratch accounts at **scratch.mit.edu**, or you can set up student accounts if you have a Teacher Account. To request a Teacher Account, go to: **scratch.mit.edu/educators**

☐ **Set up a computer with projector or large monitor**

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

Imagine

IMAGINE

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

Warm-up Activity: Invisible Energy Ball

Gather the group in a circle. Together you must pass an invisible energy ball around the circle, acting out the action of passing or throwing the ball. The challenge is, it is always changing shape, size, texture and even temperature.

Model this activity by passing the ball to the first participant. Say your name, then describe the ball. "I'm Alex and I'm passing you a huge energy ball that is slippery like a fish!"

The next person then acts out how they would catch that huge, slippery energy ball, introduces themself and describes the energy ball they're passing to the next person. Encourage participants to transform the ball as much as possible with each turn.

Provide Ideas and Inspiration

To spark ideas, watch the Video Sensing tutorial video. The video shows a variety of projects to spark ideas and inspiration.
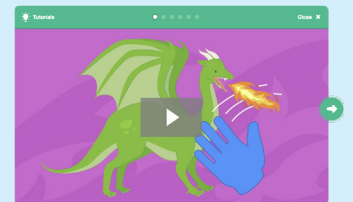
View the **scratch.mit.edu/ideas**

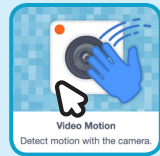# Demonstrate the First Steps

IMAGINE

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

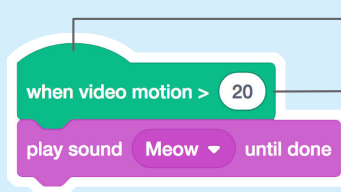### Start a new project in Scratch, then add the Video Sensing blocks.

Click the **Add an Extension** button (on the bottom of the screen).

Choose **Video Sensing** to add the video blocks.

Video Motion
Detect motion with the camera.

Pet the cat:

Cat

when video motion > 20

play sound Meow until done

This block senses motion on a sprite.

Type a larger number to make it less sensitive to movement.

Move your hand to pet the cat.

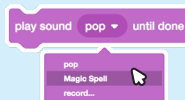### Follow these steps to choose different sprites and sounds:

Sounds

Code

play sound pop until done

pop
Magic Spell
record...

Choose a sprite.

Choose a sound.

Select your sound.

Create

CREATE

Support participants as they create interactive Scratch projects.
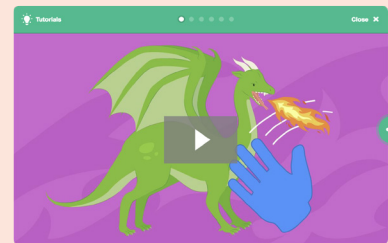
Start with Prompts
Ask participants questions to get started

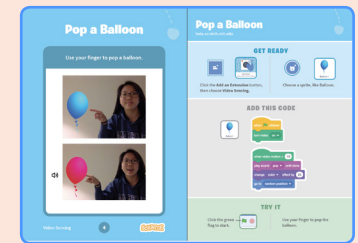*Which character or object do you want to interact with?*

What do you want it to do when you interact with it?

Provide Resources
Offer options for getting started

Pop a Balloon

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

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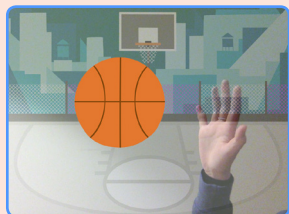
Suggest Ideas for Starting

- Add the Video Sensing blocks using the *Add an Extension* button.
- Choose a sprite to interact with.
- Decide how you want it to react.

CREATE

SHARE

More Things to Try

- Try adding a second character or object to interact with.
- If you're not sure what to do, pick a card and try something new.
- You can create a game, an interactive story, or a virtual pet.

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 Video Sensing activity cards can be done in any order, with a range of different character and object sprites.

Encourage students to try new things:

What are different ways your project can react?

Can you create a project that two (or more) people can play?

Share

Have participants 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?

Participants can use the ideas and concepts from this workshop to create a wide variety of projects. Encourage them to continue developing their projects into games, stories, or interactive art using the resources listed below.

Create a Story

Choose characters, add conversation, and bring your story to life.
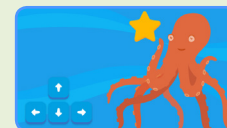
Chase Game

Make a game where you chase a character to score points.

Animate a Character

Bring characters to life with animation.

Find these projects in the Tutorials library: **scratch.mit.edu/ideas**

Created by the Scratch Team