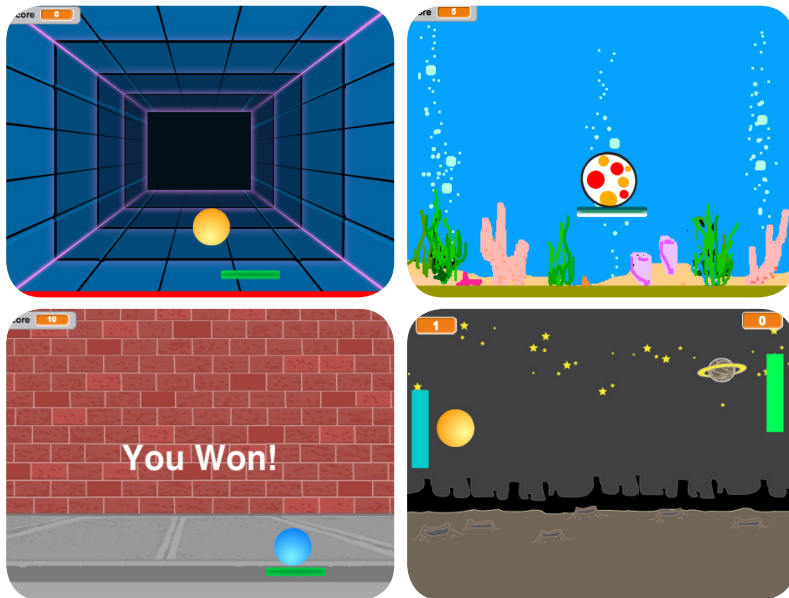# EDUCATOR GUIDE

# 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*

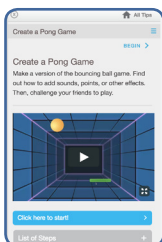At the end of the session, gather together to share and reflect.

# 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:
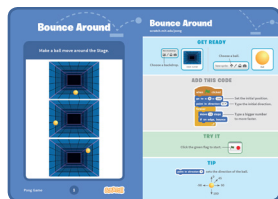**scratch.mit.edu/pong**

☐ **Print the Activity Cards**

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

☐ **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.

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# 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, such as space pong (using images of planets for the ball and stars for the backdrop).
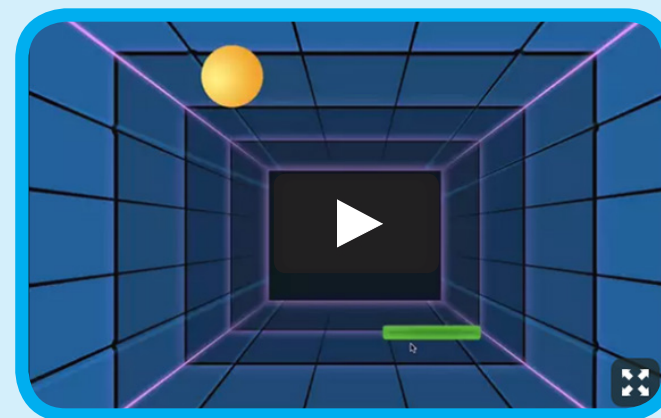


View at **scratch.mit.edu/pong** or **vimeo.com/llk/pong**
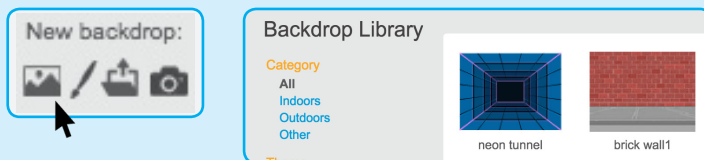
### Warm-up Activity: Bouncing Ideas

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.
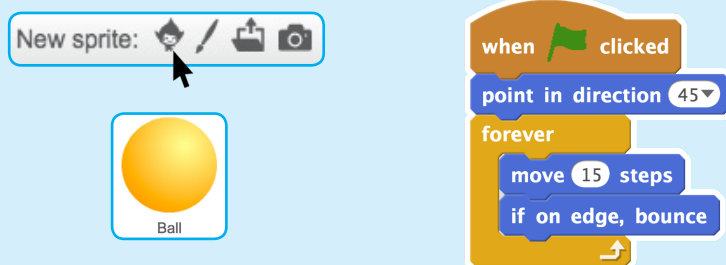
# Demonstrate the First Steps

IMAGINE

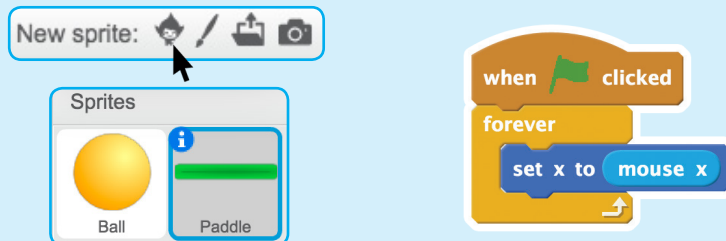Demonstrate the first few steps of the tutorial so participants can see how to get started.

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

New backdrop:

Backdrop Library

Category
All
Indoors
Outdoors
Other

neon tunnel          brick wall1

### Choose a ball sprite and make it bounce around:

New sprite:

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:

New sprite:

Sprites

Ball          Paddle

when [flag] clicked
forever
  set x to mouse x

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# Create

CREATE

Support participants as they create pong games, on their own or in pairs.
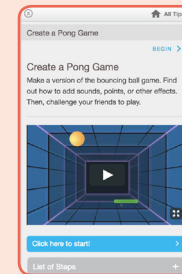
### Start with Prompts
Ask participants questions to get started
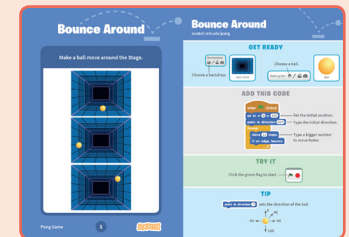
*What background do you want for your game?*

*What color or type of ball?*

### Provide Resources
Offer options for getting started

All Tips

Create a Pong Game

Create a Pong Game
Make a version of the bouncing ball game. Find out how to add sounds, points, or other effects. Then, challenge your friends to play.

Click here to start!

List of Steps

Bounce Around          Bounce Around

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

Others may want to use the printed activity cards.

### 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

CREATE

### 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
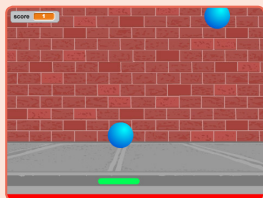
### Offer strategies for problem solving

- 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 online, click the button: '**See project page**'.

This video shows how to share a project on the Scratch website: vimeo.com/llk/share
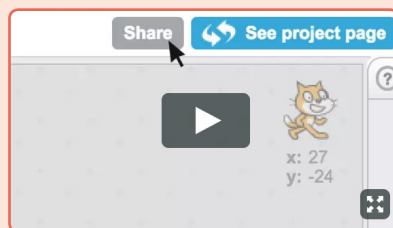
SHARE

# 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?*
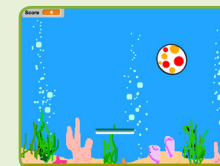
*What ideas might you add to your game?*

## 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.