



December 2, 2017

9:00 AM – 9:20 AM	Sign In
9:20 AM – 9:35 AM	Opening Ceremony
9:45 AM – 10:45	First Session Workshops
11:00 AM – Noon	Second Session Workshops
12:15 PM – 1:00 PM	Closing Ceremony: Sharing, and Raffle

This Scratch Day is a Bring Your Own Device (BYOD) event. Unless otherwise noted in the description for a specific workshop, you will need a Mac, PC, or Chromebook laptop.

Workshops

Double Sessions – 2 hours 15 minutes

Scratch for Young Artists

Judith Seidel, Hunter Earle, Henry Faulkner, Micaela Hourihan, Sarah Miller, Zora Penn, Sylvie Plouffe, and Henry Tassone, Friends Seminary

In the first half of this workshop you will learn how to create original sprites and backgrounds from your imagination or from drawing books such as Ed Emberly's *Book of Animals*. You will get drawing and animation tips from the leader as well as a group of fifth-grade Scratchers from Friends Seminary. In the second part of the workshop you will code your original sprites to meet each other, have a conversation and then make something surprising occur. You will become familiar and comfortable with such Scratch basics as the movement commands, broadcast and if statements.

Audience: Scratchers ages 7 - 10 and their parents. No prior Scratch experience is needed.

Making Musical Instruments Using Scratch for Arduino

Steve Farnsworth, The Dwight School

Use Scratch to program an Arduino to create your own uniquely weird musical instrument that can be controlled by using different kinds of sensors. Explore the world of building circuits with electronic components, wires, the Arduino and a breadboard.

Audience: Best for older Scratchers, age 12 and up; no prior Scratch experience is needed

BYOD note: For this workshop you will need a Mac or PC laptop

Bits to Atoms: Creating Physical Objects with Code

Jaymes Dec, Marymount School

Josh Burker, School at Columbia

This workshop will be an introduction to three different Scratch-like languages that can be used for designing and making physical objects like stickers, drawings, 3D prints, or embroidery patterns. You will first learn how to use TurtleArt to create drawings that can be cut on a vinyl cutter. Then you will learn how to use BeetleBlocks and Turtlestitch to create simple 3D objects and patterns for an embroidery machine.

Audience: People 12 years old and up who have at least some Scratch experience

BYOD note: For this workshop you will need a Mac or PC laptop

Making Platform Games with Realistic Gravity

Karioki Crosby, RoboFun

Games like Super Mario Brothers have scrolling background, and character movements subject to gravity. Learn how to create your own professional looking platform games using Scratch.

Audience: For Scratchers age 9 and older; some prior familiarity with Scratch is needed.

One-Hour Sessions

Customizing Your Own Scratch Game

Mimi Liu-Leyco and students, British International School of New York

Starting from a basic game template, you will decide what you want to add to make a game more fun. This include levels, enemies, obstacles, rewards, and more.

Audience: People of all ages with at least a little Scratch experience

Making Video Games with Scratch

Meghan Clark, The Packer Collegiate Institute

This workshop will help you create simple video games in Scratch using input from the mouse and/or keyboard. You are welcome to come with your own ideas! Session facilitators will also be available to help you brainstorm game ideas.

Audience: People of all ages with at least a little Scratch experience

Scratch, Cardboard, and FunkeyFunkey Musical Instruments

Karen Blumberg, The Brearley School

FunkeyFunkey is a microcontroller board – just like Makey Makey - that allows you to use every-day objects and materials such as aluminum foil, playdough, and bananas to interact with your Scratch projects. We'll construct cardboard shapes, add conductive elements, connect them to FunkeyFunkey boards, and program different instruments, sounds, and notes using Scratch to play music and form a band!

Audience: People of all ages (children under 8 years old should bring a parent or older sibling to help out). No prior Scratch experience is needed.

Pinball Wizardry - Customizing a Cardboard Pinball Machine

Godwyn Morris, Dazzling Discoveries

Using the wonderful Pinbox 3000 cardboard pinball machine as a model, you will learn how to create your own Scratch-based pinball game. Set up your own obstacles, make a digital score board, create bells and whistles and add other fun-filled game features. Then test your pinball expertise in real time using Funkey Funkey and Scratch on actual cardboard pinball machines.

Audience: People of all ages; no Scratch experience needed

Make it From Scratch...Jr

Julianne Ross-Kleinmann, Dutchess County BOCES

Joseph Kleinmann, ISTE

Learn how to create your own interactive stories and games using Scratch Jr. Are you at the beginning stages of coding? Would you like to learn how to code? Are you familiar with Scratch? This workshop is an introduction to coding through story-telling and gaming. This is a great way for parents and teachers to introduce their children to coding and Scratch.

Audience: Younger Scratchers ages 5 to 7, their parents, and teachers; no prior experience is needed.

BYOD note: For this workshop you will need an iPad, Android tablet, or Chromebook.

Before Scratch Day: Please download and install Scratch Jr for iPad from the Apple Store or for Android tablet from Google Play

Scratch Memories: A New Way to Celebrate Your Journey

Shruti Dhariwal, Scratch Team, MIT Media Lab

Enter your username to see a personalized video celebrating your key moments, creations, and connections, since the time you first joined the Scratch community. You'll also get to design colorful memory booklets to represent your Scratch journey in your own ways. We'll use lots of different Scratch stickers and craft materials for fun and inspiration!

Audience: Some experience with sharing projects on the Scratch website is needed.

Scratch + micro:bit: Tinkering in the Physical World

Kreg Hanning, Lifelong Kindergarten Group, MIT Media Lab

Double the creative possibilities by connecting physical and digital worlds. Learn how to use Scratch programming blocks for interacting with the popular, low-cost micro:bit device. Use the micro:bit tilt sensor to control characters in your Scratch game, and program animations on the micro:bit LED display.

Audience: suitable for people of all ages. No prior Scratch experience is needed.

BYOD note: For this workshop you will need a Mac

Before Scratch Day: Please install Scratch Device Manager on your Mac. To do that, go to <https://scratch.mit.edu/projects/186328344/#editor>

Fun with Finch

Hope Chafian, The Spence School

The Finch is a robot that has built in sensors (light, distance, temperature, orientation), motors, lights, and sound. It comes ready to program right out of the box. Plug it in, connect to Scratch, and learn to program it to interact with its environment. In this session, choose which challenges you want to try:

- use the Finch as a game controller with a Scratch video game
- program the Finch to navigate bridges, tunnels, and obstacles
- program the Finch as a self-driving car, avoiding collisions and staying on the road
- get your Finch to follow a partner's Finch while that one tries to avoid you
- build a maze and get the finch to follow it
- make up a challenge of your own that you and others in the workshop can try to meet.

Audience: Best for Scratchers, age 8 and up with some Scratch experience

Crazy Maze Games

Caroline DeVoe, Teachers College, Columbia University

This workshop will tap into your inner storyteller and guide you in designing a character-driven and interactive maze-based game that you will be able to save and continue building on at home. You will be introduced to coding semantics and functions as you learn how to incorporate elements into a Scratch program, design and manipulate sprites, add events and other special effects to create a fun, open-ended, and whimsical game.

Audience: Young people ages 7 to 10 and their parents; no prior Scratch experience needed.

Sharing and Raffle

At the end of Scratch Day, we will come together to share projects developed during the workshops. We will also raffle off some cool prizes that have been donated by our sponsors:

- Two [Makey Makey](#) Kits
- Two [Funkey Funkey](#) Kits
- Three certificates for a free 3D Printing and Crafts Weekend Workshop at [Dazzling Discoveries](#)
- A discount certificate for a workshop at [RoboFun](#)