projects

peers

passion

play

Welcome to Scratch@MIT 2014!

Wednesday Aug 6 – Saturday Aug 9

Hosts

MIT Media Lab

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FOUNDATION

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Give P's a Chance

Over the past couple years, it seems that everyone has become interested in coding (computer programming). Everywhere you look, there is a new website, book, or club promising to help people learn to code.

Scratch has been an important part of this learn-to-code movement: activity on the Scratch website has tripled in the past year. But our goal with Scratch is not simply to help young people learn to code. Our ultimate goal is to help young people develop as creative thinkers, makers, and innovators.

How can we accomplish that goal? In developing and introducing Scratch, we have been guided by a set of principles that we call the 4 P's of creative learning:

Projects Provide opportunities for people to create personally-meaningful projects, from initial idea through multiple iterations to final product

Peers Engage people in sharing ideas, collaborating on projects, and building on one another's work

Passion Encourage people to work on projects that they care about, so that they'll feel invested in working harder and persisting in the face of challenges

Play Foster a culture of playful experimentation, so that people are willing to try new things, take risks, and explore what's possible.

These 4 P's serve as a unifying thread through all of the sessions at the Scratch@ MIT Conference. As you participate in workshops, panels, posters, and talks at the conference, you'll have lots of opportunities to see and share examples of how the 4 P's can foster creative learning experiences.

By the end of the conference, I hope all of us will be full of new ideas and strategies for engaging young people in exploring, experimenting, and expressing themselves through coding.

Scratch on!

Mitch Resnick
Professor of Learning Research, MIT Media Lab
Director, MIT Scratch Team

Contents

Icon Guide

Connecting Scratch to the Physical World

Best Bet for Beginners

Scratch Around the World

Scratch in the Classroom

Informal Learning and Scratch

Other Software Inspired by Scratch

Join the Discussion

Follow the Conference on Twitter: #ScratchMIT2014

Share your thoughts and notes about sessions: http://bit.ly/scratch2014notes

Wednesday

6:00p   **Early Registration and Opening Reception**

Thursday

8:30a   Breakfast

9:30a   **Keynote: Looking Back, Looking Ahead**

10:30a   Break

11:00a   **Workshops**

Event Space   **Getting to Know the Scratch Curriculum Guide**
Karen Brennan, Christan Balch, Michelle Chung

Auditorium 633   **Scratch & Hour of Code**
Kelly Vaughan

Silverman Room   **Scratch Extensions**
Sayamindu Dasgupta, Shane Clements, Abdulrahman idlbi, Chris Willis-Ford

RM 525   **Sensing Me!**
Margaret Low, Thomas Preece, Arteesha Bosamia,
Matthew Healey, Marie Low

LEGO Learning Lab   **Getting Started with Scratch**
MIT Scratch Team

RM 493   **Do it Yourself Cardboard Interface**
Daisuke Kuramoto, Kazuhiro Abe, Akifumi Kumai, Yu Dobashi, Sae Matsuda

RM 240   **Scratch & Middle School Music**
Jesse M. Heines, Gena Greher

RM 244   **Scratch & MaKey MaKey**
Barb Tennyson, Karen Garrison

12:30p   Lunch

2:00p   **Workshops**

Event Space   **ScratchJr**
Amanda Strawhacker, Melissa Lee, Paula Bonta

Auditorium 633   **Math Reinforcement with Scratch, Grades 2–8**
Claire Caine

Thursday

2:00p **Workshops Continued**

Silverman Room
MaKey MaKey: Banana Pianos & Beyond
Eric Rosenbaum

RM 525
Building Scratch for Kinect
Stephen Howell

LEGO Learning Lab
Chain Reaction with LEGO WeDo
Amos Blanton

RM 493
Arduino & Scratch
Abdulrahman idlbi

RM 240
Scratch Orchestra: Play Original Instruments
Yasushi Harada, Yoshiro Miyata, Tomohiro Ueshiba, Nobuyuki Ueda, Keiko Onishi

RM 244
Robot Finches with Scratch
Eileen Malick

3:30p Break

4:00p **Posters**

Third Floor Atrium
Scratch Across Borders
Jenny Junkin, Colin Meltzer, Sonia Ghandi

The Cat & the Finch
Janet Dee

The Plug-In Studio: A Portable Classroom
Steve Ciampaglia, Kerry Richardson

Breaking Out with Scratch
Derek Breen

Scratch & MaKey MaKey
Andrew Csizmadia

Career Plan
Ernest Dodson

Participation, Remixing & Creativity
Yue Han, Pinar Ozturk

Thursday

4:00p **Posters Continued**

Third Floor
Atrium

Build Your Own Block Language
Stefano Federici, Elisabetta Gola, Emiliano Ilardi

Snap! and the Beauty and Joy of Computing
Brian Harvey

Robot Control Programming
Kenji Kawase, Chris Narihara, Toru Latto,
Aleksandrs Groms, Tenpei Inoue

Programming Education Gathering: Raspberry Pi
Kazuhiro Abe, Akifumi Kumai, Yu Dobashi,
Daisuke Kuramoto, Manabu Sugiura, Nobuko Kishi

ITJ Elementary School Scratch Club
Nieves Garcia Mainou

Knit On Scratch On: E-Textiles and Scratch
Connor Hudson, Katie Gray

The Development of Simple Fluid Interface, K-12
Jintae Lee, Miyoung Ryu, Seonkwan Han, Jongphil Cheon

Scratch After-School Club
Barbara Mikolajczak, Liam Walsh, Joseph Broderick,
Mattea Del Peschio, Jenna Pittore

World Community Project
Yoshiro Miyata, Lorraine Leo, Yasushi Harada,
Nobuyuki Ueda, Tomohiro Ueshiba, Keiko Onishi

Sniff: Post-Scratch Programming
Ian Stephenson, Tom Stacey

Development of Creative Computing
Jeonghwan Park, Miso Kim, Seonkwan Han, Soohwan Kim

Google's CS First Program
JamieSue Goodman, Sarah Judd

Controlling Our World
Thomas Preece

5:30p **MIT Museum Open to Conference Participants**
Walking Map on page 52

7:00p **Self-Organizing Dinner Excursions**

Friday

8:30a	Breakfast
9:30a	**Keynote: Making, Coding, Writing**
10:30a	Break
11:00a	**Panels**

Auditorium 633

Reflections on the Creative Computing Online Workshop
Karen Brennan, Sarah Blum-Smith, Max Yurkofsky

RM 525

Scratch Online Community
Amos Blanton, Ricarose Roque, Eric Schilling, Sarah Otts

RM 240

Scratch Clubs
JamieSue Goodman, Linda Sandvik

11:00a **Workshops**

LEGO Learning Lab

Digging Deep into Kids' Novice Programming
Deborah Fields, Taylor Martin, Phil Janisiewicz

RM 244

Hopscotch: Visual Programming on the iPad
Jocelyn Leavitt, Jason Brennan, Asha Gupta

11:00a **Ignite Talks**

Event Space

How Kids Program Apps On Smartphones
Wolfgang Slany

From Sensors to Builders
Laia Sánchez, Bernat Romagosa

Snap4Arduino
Bernat Romagosa, Laia Sánchez

Zombie-Oriented Programming in Snap!
Jens Mönig

Tinkering
Joe Jones

Teach Programming with Scratch & Kinect
Stephen Howell

From Mouse to Multi-Touch: Scratch On Tablets
Mike Chen

Scratch, Robotics, Early Childhood: Bolivia
Christopher Neeskens Flores, Silvia Karina Maldonado

Friday

12:00p	**Lunch**
1:30p	**Panels**

Auditorium 633 · **Extending Scratch 2.0 with Strange Devices**
Stephen Howell, Connor Hudson, Kreg Hanning

RM 525 · **Connected Code**
Yasmin Kafai, Quinn Burke

RM 240 · **Libraries: We Got an Itch for Scratch**
Crystal Williams, Lynne Keith, Beth Slade, Rachel Sulyok

1:30p **Workshops**

LEGO Learning Lab · **Imaginative Animal Painter for ScratchJr**
Masahiro Yachi, Kaori Hashizume

RM 244 · **Snap! Build Your Own Blocks**
Brian Harvey

1:30p **Ignite Talks**

Event Space · **Family Creative Learning**
Ricarose Roque, Saskia Leggett

Flat Scratch Cat Project
Will Davies, Henry Davies

Towards Gender Balance in Computer Science
Derek Breen

A Student Shares His Perspective
Barb Manchee, Grant Turner

Making Room for Making
Ingrid Gustafson

Invent Your School
Dylan Ryder

What Motivates Scratchers
Natalie Rusk, Catherine Feldman

Scratch in a Lower School Classroom
Alexis Cobo

Friday

2:30p	**Break**
3:00p	**Unconference Sessions**
	Propose and organize your own sessions for this timeslot
4:00p	**Break**
4:30p	**Posters**

Third Floor
Atrium

Snapin8r: Scratch to Snap! & Beyond
Kartik Chandra

Exploring Cybernetics in K–12 Classrooms
Xabier Basogain, Juan Carlos Olabe

Controlling Scratch with Leap Motion
Kreg Hanning

Imagine if Scratch Were 3D
Derek Breen, Daniel Wendel

Creating 8-Bit Art Games with Scratch
Steve Ciampaglia

Kids Scratching to Help Other Kids Learn
Gabriela Degiampietro

Art & Design Students
Guatham Dayal, Geetha Narayanan, Lavanya Sahi

Two Case Studies From Turkey
Sehnaz Baltacı Göktalay, Zulfu Genc, Nese Erses

Blockext Hardware Extensions
Connor Hudson

Reflections on "Scratch From Scratch"
Stephen Howell

Smart Educational Robot with Scratch
Jungmi Hong, Heejeong Seo, Soohwan Kim, Seonkwan Han

SM4T: Scratch MOOC for Teens
Inés Friss de Kereki, Víctor Paulós

Simulating Science with Scratch
Steve Martin

Scratch Curriculum for Mexico
Tiffany Navarro

Friday

4:30p   **Posters Continued**

Third Floor
Atrium

Introducing New Input Devices in Hands-On Workshops
Nobuko Kishi, Manabu Sugiura, Kazuhiro Abe, Stephen Howell

Pocket Code: Programming for Smartphones
Wolfgang Slany, Lukas Radacher

Cross-Curricular Integration of Scratch
Barb Tennyson, Karen Garrison, Karen Eutemey

Making it Your Own Through Agile Design
Ursula Wolz

Material Programming
Tomohito Yashiro, Kazushi Mukaiyama

Scratch at Citilab
Bernat Romagosa, Laia Sánchez

6:00p   **Conference Dinner**

Saturday

8:30a   Breakfast

9:30a   **Keynote: Scratchers Helping Scratchers**

10:30a   Break

11:00a   **Panels**

Auditorium 633

What's Next for Scratch?
MIT Scratch Team

RM 525

Let the Magic Begin: Transform Your World
Aileen Owens, Melissa Unger, Shad Wachter

RM 240

Scratching Deeper: Expanding Accessibility
Steve Ciampaglia, Kerry Richardson

11:00a   **Workshop**

RM 244

Learn How to Create Apps for Smartphones
Wolfgang Slany, Lukas Radacher

Saturday

11:00a **Ignite Talks**

Event Space

Code Club: Hacking the Future
Linda Sandvik

Scratchin' Italy
Alberto Barbero

Best Practices for Engaging Kids
Claude Terosier

The Impact of Scratch on China's Education System
Z. Zhong

BVH Character Animation Files for Scratch
Manabu Sugiura

Inventors4Change
Eduard Muntaner Perich, Jordi Freixenet, Mariona Niell, Xavier Cufí

Using Snap! to Teach the Big Idea of "Data"
Dan Garcia

What We Learned Whilst Teaching Scratch
Arteesha Bosamia, Matthew Healey, Thomas Preece

Shakespeare & Scratch
John Avitabile

12:00p **Lunch and Closing Plenary**

1st Floor
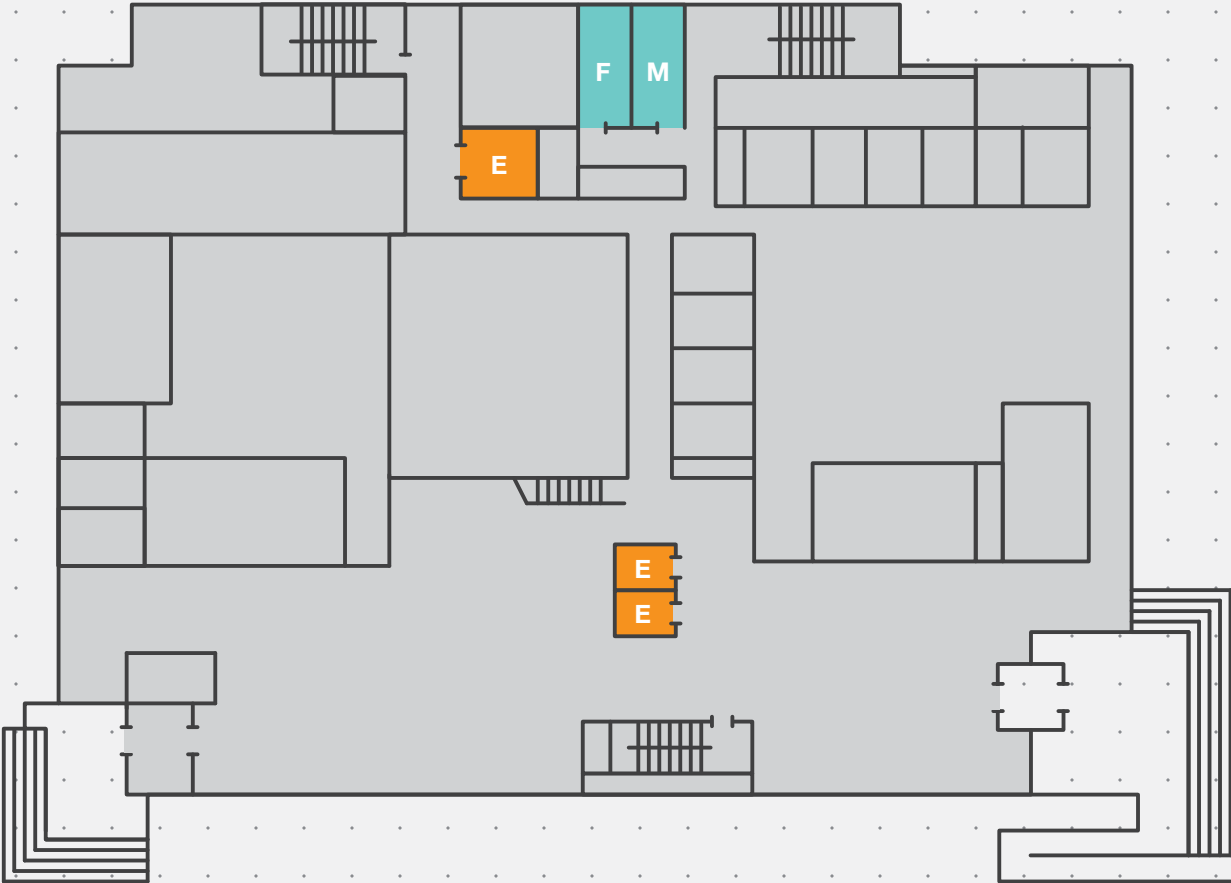
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2nd Floor

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244   240

E

E

3rd Floor
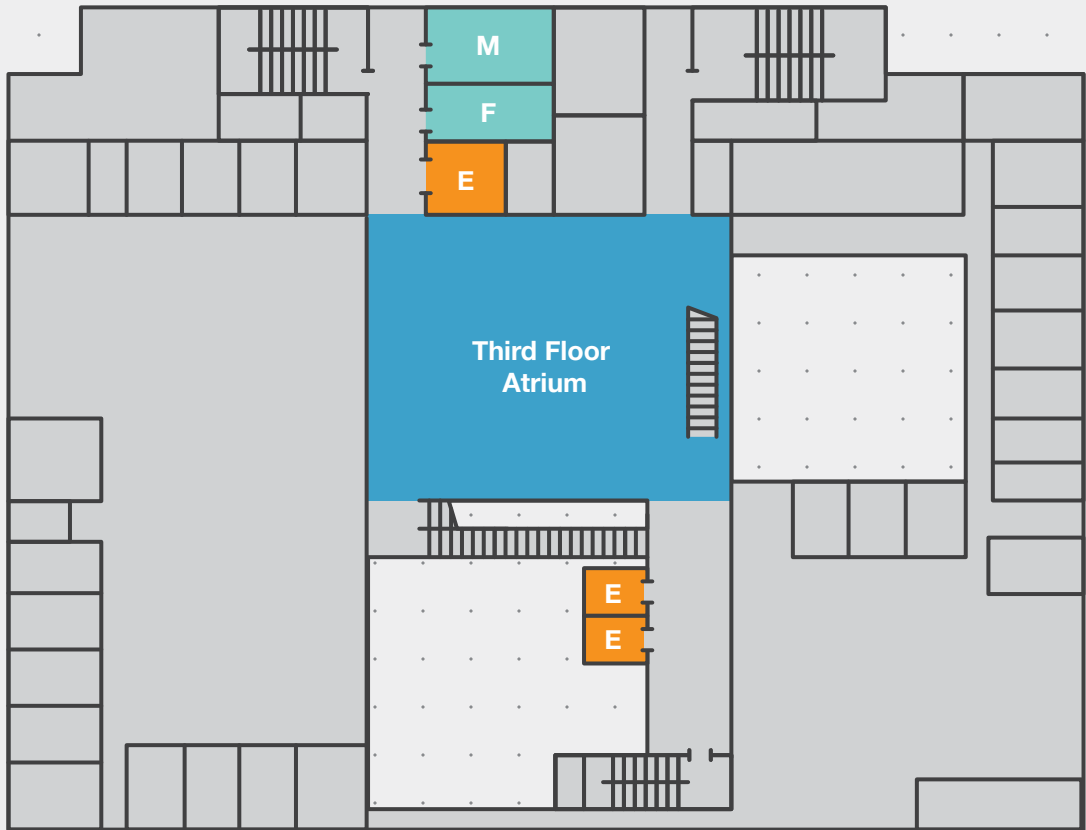
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4th Floor

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E

LEGO Learning Lab

5th Floor

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525
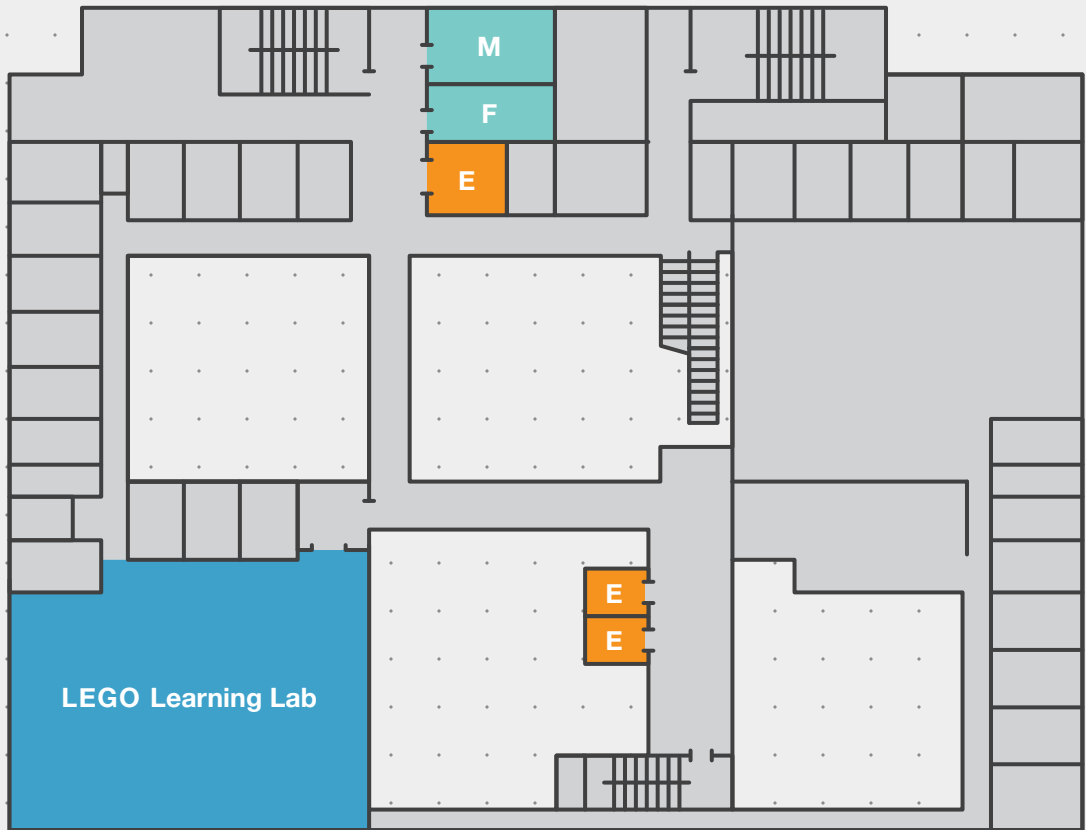
Active Room	Elevator	Stairs	Bathrooms

6th Floor

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Silverman Room

Event Space

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Auditorium 633
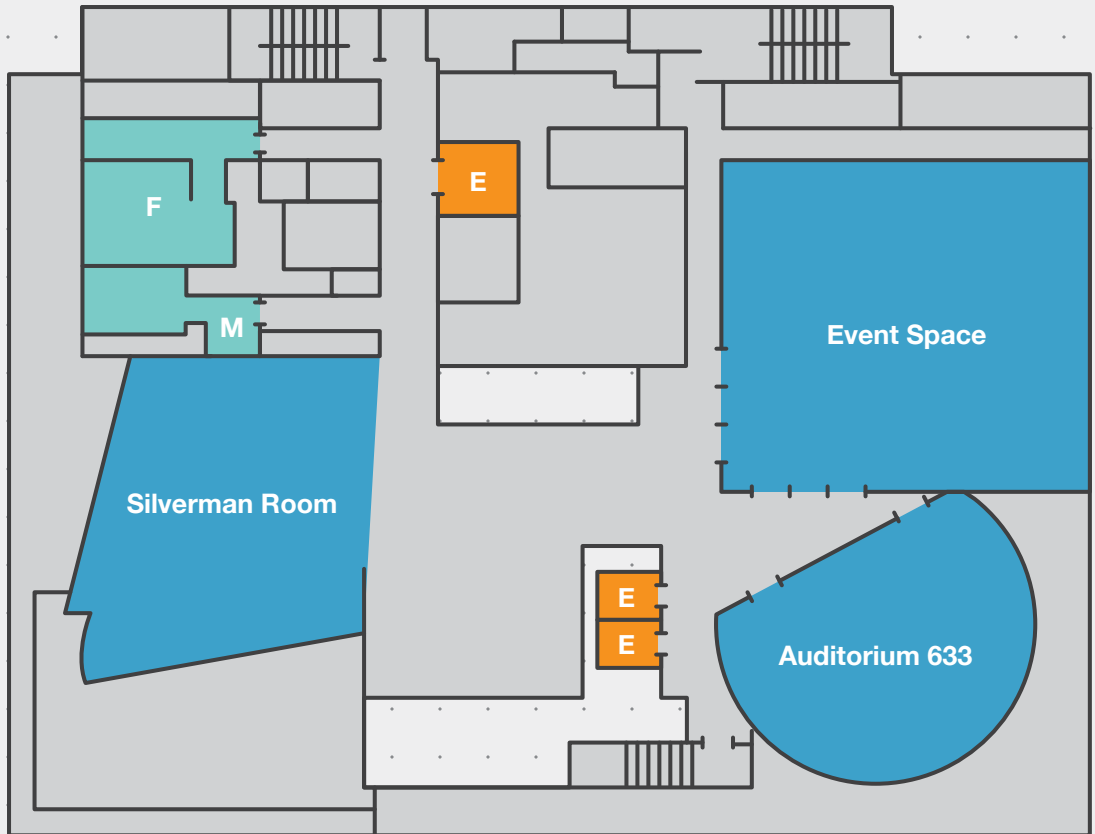
THURSDAY

Looking Back, Looking Ahead

The world of Scratch continues to grow and evolve, expanding opportunities for young people to imagine, create, and learn through coding. Members of the Scratch, ScratchEd, and ScratchJr teams will reflect on significant developments of the past year — and provide a sneak preview of new initiatives planned for the upcoming year.

Today's Schedule

Breakfast	8:30a – 9:30a
Keynote: Looking Back, Looking Ahead	9:30a – 10:30a
Break	10:30a – 11:00a
Workshops	11:00a – 12:30p
Lunch	12:30p – 2:00p
Workshops	2:00p – 3:30p
Break	3:30p – 4:00p
Posters	4:00p – 5:30p
MIT Museum Open to Conference Participants Walking Map on page 52	5:30p – 7:00p
Self-Organizing Dinner Excursions	7:00p – 8:30p

Workshops

Karen Brennan, Christan Balch, Michelle Chung

Getting to Know the Scratch Curriculum Guide

EVENT SPACE

Want to help others create, share, and learn with Scratch? Whether new to Scratch or just looking for fresh ideas, join members of the Harvard Graduate School of Education's ScratchEd Team for an interactive exploration of the updated Creative Computing Curriculum Guide. The workshop will begin with an overview of the new Guide and a discussion. You will then get a chance to engage in hands-on activities from the Guide. Please bring a laptop.

Sayamindu Dasgupta, Shane Clements, Abdulrahman idlbi, Chris Willis-Ford

Scratch Extensions

SILVERMAN ROOM

With Scratch "extensions," people can connect Scratch to physical devices (such as sensors and robotics kits) and to web services (such as weather databases and translation services). Come to this hands-on workshop to get a first-hand introduction to extensions. Explore some sample extensions and use them to create projects—or dive deeper into the extension system and learn how to make your own extensions using JavaScript.

Kelly Vaughan

Scratch & Hour of Code

AUDITORIUM 633

Did you participate in Hour of Code? Do you have ideas for Scratch lessons that could be used in classrooms working on the Common Core standards? Integrating Scratch into the required curriculum is a challenge that many teachers face. Join this hands-on workshop to discuss and share lesson ideas to address this challenge—and collect lessons into a portfolio for use beyond the conference.

Margaret Low, Thomas Preece, Arteesha Bosamia, Matthew Healey, Marie Low

Sensing Me!

RM 525

Young people are surrounded by sophisticated high-tech devices that are designed to be easy-to-use without an understanding of how they work. The Technology Volunteers at the University of Warwick take the opposite approach: providing opportunities for young people to build "cheap and cheerful" sensors and reflect on how such devices work. This hands-on workshop explores this build-it-yourself approach, focusing on what can be sensed and measured about people. You will get a chance to build and calibrate sensors to measure a variety of human abilities (such as hand-eye coordination, color perception, and reaction times), use these sensors in projects, and discuss ideas for additional sensors and applications.

MIT Scratch Team

Getting Started with Scratch

| | LEGO LEARNING LAB

New to Scratch? Members of the MIT Scratch Team will guide this playful introduction to the Scratch programming language. Learn the basic building blocks and core concepts in Scratch while creating an interactive animation. Find out about a range of ways that youth and educators are using Scratch to create their own interactive stories, games, animations, and simulations in a wide variety of settings. Discuss strategies for helping others get started with Scratch.

Jesse M. Heines, Gena Greher

Scratch & Middle School Music

| | RM 240

While the arts continue to suffer budget cuts in high schools across the country, most states still require all middle school students to take courses in the arts, including music. This hands-on workshop will explore how to integrate computing into middle school music classes to extend the reach and effectiveness of these programs. In the workshop, you will have the opportunity to engage in several activities that have been used successfully in middle school classrooms. Presenters will also lead a discussion of the barriers to implementation of interdisciplinary teaching and possible ways to overcome them.

Daisuke Kuramoto, Kazuhiro Abe, Akifumi Kumai, Yu Dobashi, Sae Matsuda

Do it Yourself Cardboard Interface

| | RM 493

In this playful workshop, you will get the chance to create cardboard interfaces using everyday objects such as recycled paper products, aluminum foil, and metal clips — and use these interfaces to control stories, games, and simulations in Scratch. The cardboard interfaces will be connected to Scratch via Nanoboards, Raspberry Pi's, and MaKey MaKey boards.

Barb Tennyson, Karen Garrison

Scratch & MaKey MaKey

| | RM 244

Thinking about using MaKey MaKey with Scratch in your classroom? This workshop will describe projects and experiences with MaKey MaKey in elementary school science classes (with 3rd and 6th graders). Then, you'll get a chance to dive in and play with MaKey MaKey, creating physical interfaces to your Scratch projects using bananas, Play-Doh, aluminum foil, and other everyday objects. Prepare to play! **Limited to 25 participants.**

Workshops

Amanda Strawhacker, Melissa Lee,
Paula Bonta

ScratchJr

🏳 | **EVENT SPACE**

Explore ScratchJr, a brand new iPad-based version of Scratch, designed specifically for young children, ages 5–7. The ScratchJr interface and programming language were redesigned to make them appropriate for younger children's cognitive, personal, social, and emotional development. Members of the ScratchJr development team will provide a hands-on introduction to ScratchJr, describe principles underlying its design, and discuss strategies for using ScratchJr in early-childhood education from kindergarten through 2nd grade.

Claire Caine

Math Reinforcement with Scratch, Grades 2–8

📖 | **AUDITORIUM 633**

In this hands-on workshop, you will get a chance to work through math projects appropriate for grades 2–8. For middle school, the math problems will include recursion. A "scope and sequence" for programming will be interwoven throughout the discussion of the problems.

Eric Rosenbaum

MaKey MaKey: Banana Pianos & Beyond

🧩 🏳 | **SILVERMAN ROOM**

MaKey MaKey is an invention kit that lets you transform everyday objects into computer keys. For example, you can make a game controller out of Play-Doh or a piano out of bananas. In this workshop, you will get a chance to create your own playful inventions using MaKey MaKey, Scratch, and everyday materials such as foil, foam, furniture, and coffee cups. There will also be opportunities to discuss strategies for supporting and inspiring others as they work on MaKey MaKey projects.

Stephen Howell

Building Scratch for Kinect

🧩 | **RM 525**

Prepare to jump around the room and have fun in this spirited workshop. You'll get an opportunity to develop computer games with Scratch and Kinect, a hands-free motion control device that allows "skeletal tracking" of body motion. Originally developed in 2011, Kinect2Scratch has been used in thousands of classrooms, outreach programs, and computer clubs around the world. In the workshop, you can enjoy a beginner's introduction to Kinect2Scratch, or explore more advanced uses of Kinect2Scratch, with tips and tricks from the technology's developer.

Amos Blanton

Chain Reaction with LEGO WeDo

LEGO LEARNING LAB

Create a Rube Goldberg-style chain reaction, using Scratch, LEGO WeDo, rubber balls, duct-tape, and a variety of other playful materials. With the help of members of the MIT Scratch Team, you will learn to use Scratch to program motors and sensors in the LEGO WeDo robotics kit—then design links in a chain-reaction that connects the physical world and the digital world. The workshop will cover a lot of ground in a short time, so come with a good understanding of how to program with Scratch. **Limited to 15 participants.**

Abdulrahman idlbi

Arduino & Scratch

RM 493

Connect Scratch to the physical world using an Arduino board. WIth the help of members of the MIT Scratch Team, you will learn how to use an experimental Scratch Aduino extension to program LEDs, motors, and sensors to create virtual-physical world interactions.

Yasushi Harada, Yoshiro Miyata, Tomohiro Ueshiba, Nobuyuki Ueda, Keiko Onishi

Scratch Orchestra: Play Original Instruments

RM 240

Create and program musical instruments with Scratch and play in a conference concert! In this hands-on workshop, you'll get a chance to explore new forms of musical expression by recording interesting sounds from the local surroundings and controlling sounds with body motions and sensors.

Eileen Malick

Robot Finches with Scratch

RM 244

Play with "Finch Robots" created by Carnegie Mellon's CREATE lab and BirdBrain Technologies. The robots, designed to introduce the art of robotics programming to students of every age, can be used with more than a dozen programming languages, including Scratch. In this workshop, you will be able to experiment with the robot's light sensor, temperature sensor, obstacle sensors, accelerometers, buzzer, beak LED, and motor controls. You will get a chance to tackle challenges that were created for Boy Scouts and Girl Scouts as young as 8 years old.

Posters

Jenny Junkin, Colin Meltzer, Sonia Ghandi

Scratch Across Borders

In the Scratch Across Borders project, 8th graders at the Carroll School in Lincoln, MA, worked with peers at Global Discovery Academy in Valodara, India, to create video games. Using technologies such as video chat and desktop sharing, the students created their first international software projects. Come to this poster to see projects created by the students and hear teachers talk about the successes and challenges of the collaboration.

Janet Dee

The Cat & the Finch

This poster will demonstrate how to use Scratch to program a Finch Robot, designed at Carnegie Mellon's CREATE lab and commercialized by Bird Brain Technologies. The Finch has multiple sensors, wheels, and an LED light in its beak. It can be used as a remote controller or as the object for programmed behaviors. You'll get a chance to try out the Finch and will learn how to install the Scratch extension blocks that are necessary to program Finch Robots.

Steve Ciampaglia, Kerry Richardson

The Plug-In Studio: A Portable Classroom

Meet The Plug-In Studio (pluginstudio.net), an autonomous, self-contained, and entirely portable Scratch classroom designed to bring technology-based art-making and instruction to underserved adults, children, and teens in community-learning sites in Chicago. The Plug-In Studio partners with social service and arts organizations to provide free, collaborative, hands-on Scratch workshops for adults and families — and after-school Scratch classes for children and teens. The Studio makes use of Scratch along with other innovative, affordable learning technologies, including PicoCrickets, littleBits, and Squishy Circuits.

Derek Breen

Breaking Out with Scratch

This demonstration will lead you through a simple game-design process, creating the classic Pong game in Scratch 2.0. It will show how to gradually modify games with a variety of programming, painting, and sound techniques to create a unique game. The skills and concepts introduced will follow the trajectory of video game mechanic evolution (Pong to Breakout to Space Invaders to Tetris). The examples are intended to serve as a model for presenting multi-tiered lessons that engage students of varying programming and artistic aptitudes.

Andrew Csizmadia

Scratch & MaKey MaKey

This poster will present the results of a small-scale study investigating how Scratch and MaKey MaKey can be used together to promote "computational thinking" among learners. The study precedes a national curriculum initiative in England, set to begin in September 2014, to encourage and promote computational thinking among all students.

Ernest Dodson

Career Plan

This poster will show what happened when a teacher in an urban elementary school, the largest in Boston, asked students to use Scratch to illustrate their journeys after a goal-setting and self-esteem workshop called "Who's Steering the Ship?"

Yue Han, Pinar Ozturk

Participation, Remixing & Creativity

In an effort to encourage more participation, collaboration, and creativity in the Scratch community, this poster will describe an analysis of remixing patterns in the community and propose a new "recommender system" for helping community members identify projects of interest. The current Scratch website offers personalized recommendations based on the user's friend network, but that approach is not very useful for users without many friends. The proposed recommender system uses project tag and title data to make project suggestions, and it is designed to emphasize diversity in its recommendations.

Stefano Federici, Elisabetta Gola, Emiliano Ilardi

Build Your Own Block Language

When students learn basics about programming with Scratch, it can be difficult for them to move to a standard, full-featured language. One approach that can help the transition is to create an expanded blocks language with more of the features of a standard programming language. This poster describes an environment called BloP that enables the development of expanded blocks languages—and (unlike well-known Scratch mods like BYOB and Snap!) allows for hiding setup scripts and locking vital features to create a safer environment for experimentation. You will have the opportunity to experiment with BloP implementations of full-featured languages.

Posters

Brian Harvey

Snap! and the Beauty and Joy of Computing

Learn about the Beauty and Joy of Computing (BJC), a curriculum for the CS:Principles Advanced Placement course. BJC is based on Snap!, a reimplementation of Scratch with extensions to support teaching computer science at the AP level. Key ideas in the BJC curriculum include recursion, higher-order functions, and the use of programming as a medium for exploring Big Data.

Kazuhiro Abe, Akifumi Kumai, Yu Dobashi, Daisuke Kuramoto, Manabu Sugiura, Nobuko Kishi

Programming Education Gathering: Raspberry Pi

The Programming Education Gathering gives children in Japan the opportunity to learn to program both physical and virtual objects, using low-cost Raspberry Pi computers so that children can program anytime anywhere, in and out of school. Organized by the Japanese nonprofit organization CANVAS, with support from Google, the initiative aims to introduce coding to 25,000 children, through partnerships with elementary schools, middle schools, high schools, universities, NPO's, and local governments. The poster session will demonstrate a variety of Scratch projects from the initiative.

Kenji Kawase, Chris Narihara, Toru Latto, Aleksandrs Groms, Tenpei Inoue

Robot Control Programming

Meet "Robotist," a new series of learning resources for building and programming robots. Robotist is based on an Arduino-compatible circuit board, customized building blocks, and a modified version of Scratch. The goal of Robotist is to provide children with tools that nurture an interest in science and technology.

Nieves Garcia Mainou

ITJ Elementary School Scratch Club

Learn how teachers at an elementary school in Mexico have used Scratch to help address sensitive topics with pre-adolescent kids in a very effective way. For the past five years, the ITJ Elementary School has organized a collaborative Scratch Club for 5th grade students from several schools. This year, the topic was Safety Smart Online, and teams built projects on topics such as cyberbullying. As part of the process, students shared ideas to help fellow 5th graders understand how to take care of themselves as they interact with others online.

Connor Hudson, Katie Gray

Knit On Scratch On: E-Textiles and Scratch

How can you use Scratch to make fabrics, textiles, and wearable materials come to life? This poster will include interactive demonstrations of e-textile projects like piano gloves, explain the process of integrating Scratch with e-textiles, and engage your imagination in future possibilities.

Jintae Lee, Miyoung Ryu, Seonkwan Han, Jongphil Cheon

The Development of Simple Fluid Interface, K–12

Use hand gestures to remotely control a vehicle, using a new Fluid Interface that integrates Scratch with Arduino and Leap Motion. The vehicle has ultrasonic sensors, motors, and bluetooth modules for accurate remote control. The vehicle can also avoid obstacles in its path by relaying sensor information to Scratch in real-time.

Barbara Mikolajczak, Liam Walsh, Joseph Broderick, Mattea Del Peschio, Jenna Pittore

Scratch After-School Club

This poster will report on results from the Immersive Education Scratch After-School Club at Saint John School in Boston. Using the Scratch Curriculum Guide as a reference, students in 3rd through 6th grade created projects that represented their academic and personal interests. Students then applied their programming skills to their STEM schoolwork, animating science and math topics they had learned during the normal school day. During this session, students will share their projects, explain the code they used, and field questions about their experience with Scratch.

Yoshiro Miyata, Lorraine Leo, Yasushi Harada, Nobuyuki Ueda, Tomohiro Ueshiba, Keiko Onishi

World Community Project

Come learn about the World Museum, in which children from more than 30 countries on five continents have been collaborating using Scratch. In the World Community Project, students around the world are attempting to create a global community by sharing interesting aspects of their cultures. In Scratch Pals, students from Japan, United States, Spain, and other countries paired up to create Scratch projects about themselves and their cultures — and then remixed each other's projects to create a dialogue.

Posters

Ian Stephenson, Tom Stacey

Sniff: Post-Scratch Programming

Children often struggle to make the leap from Scratch to mainstream text-based programming. Sniff is designed to ease the transition. It uses the notation and semantics of Scratch, but in a text-based format. This poster will demonstrate how children can use Sniff to interact with physical devices.

Jeonghwan Park, Miso Kim, Seonkwan Han, Soohwan Kim

Development of Creative Computing

In Korea, computer education classes during the school day are about internet use and simple applications, such as Excel and Powerpoint. Recognizing that this approach does not faciliate student creativity and problem-solving skills, the authors of this poster developed a Creative Computing Curriculum based on Scratch, for use in after-school programs. They will show evidence of the effectiveness of their curriculum in improving problem-solving capability and computational thinking.

JamieSue Goodman, Sarah Judd

Google's CS First Program

CS First is a Google program focused on increasing student access and exposure to Computer Science (CS) Education through after-school and summer programs. The goal is to build CS Education capacity in middle schools. The after-school programs are developed by Google CS Teaching Fellows who provide volunteers with all the materials needed to lead a CS First club using Scratch and cs-first.com. Volunteers participate in conjunction with local schools. In the first year pilot phase, CS First had more than 80 community volunteers reaching more than 1,200 students and the programs are scaling to more areas this fall.

Thomas Preece

Controlling Our World

Come see how Scratch can be used to sense and control the world around us using the Arduino microcontroller. Members of the Technology Volunteers from University of Warwick will show example projects from their hands-on workshops using Scratch and Arduino in schools, and they will share resources and tutorials for recreating these projects and activities.

Making, Coding, Writing

Are the Maker Movement and Coder Movement transforming the ways people think about literacy? Should coding and making be viewed as new forms of writing? **Dale Dougherty** (MAKE Magazine), **Elyse Eidman-Aadahl** (National Writing Project), and **Mitchel Resnick** (MIT Scratch Team) discuss the role of making, coding, and writing in 21st-century learning.

Today's Schedule

Breakfast	8:30a – 9:30a
Keynote: Making, Coding, Writing	9:30a – 10:30a
Break	10:30a – 11:00a
Panels, Workshops, & Ignite Talks	11:00a – 12:00p
Lunch	12:00p – 1:30p
Panels, Workshops, & Ignite Talks	1:30p – 2:30p
Break	2:30p – 3:00p
Unconference Sessions Propose and organize your own sessions for this timeslot	3:00p – 4:00p
Break	4:00p – 4:30p
Posters	4:30p – 6:00p
Conference Dinner	6:00p – 8:00p

Panels

Karen Brennan, Sarah Blum-Smith, Max Yurkofsky

Reflections on the Creative Computing Online Workshop

AUDITORIUM 633

As Scratch increasingly enters into formal learning environments, such as K–12 classrooms, teachers need support for understanding Scratch both as a tool and as an approach to learning. To address this need, the ScratchEd Team at the Harvard Graduate School of Education developed an online learning experience — the Creative Computing Online Workshop (creative-computing. appspot.com) — which was hosted in June 2013. In this session, panelists will describe the workshop design, what happened during the workshop, and future plans for supporting teacher learning.

JamieSue Goodman, Linda Sandvik

Scratch Clubs

RM 240

What are the key ingredients for a successful Scratch Club? Leaders from two major initiatives — Code Club (in the UK) and CS First (organized by Google in the US) — will discuss their experiences in organizing networks of volunteer-led after-school clubs where young people learn to code with Scratch. Come hear about their strategies, activities, successes, challenges, and future plans. If you have experience with your own Scratch Club, please come join the discussion and share your stories!

Amos Blanton, Ricarose Roque, Eric Schilling, Sarah Otts

Scratch Online Community

RM 525

The Scratch online community is designed to foster creativity, learning, and contagious inspiration through the sharing, discussing, and remixing of projects. Since it launched in 2007, it has become a vibrant community with members from all around the world, sharing more than 10,000 projects a day. MIT Scratch Team members will share stories of Scratch members creating and connecting through their authentic interests, and describe efforts to support them. If you've ever wondered what's going on in the Scratch community, and how the Scratch Team thinks about it, this is a great opportunity to learn more.

Workshops

Deborah Fields, Taylor Martin, Phil Janisiewicz

Digging Deep into Kids' Novice Programming

LEGO LEARNING LAB

Would you like to be able to assess your students' computational thinking (CT) by analyzing their Scratch projects? In this workshop, you will get a chance to think about and share what kinds of CT ideas kids might learn in Scratch, using a new tool called "FUN!". Play with an early prototype of the tool to measure CT ideas, and see visualizations of how they change over time.

Jocelyn Leavitt, Jason Brennan, Asha Gupta

Hopscotch: Visual Programming on the iPad

      | **RM 244**

Hopscotch is a visual programming language for the iPad, inspired by Scratch, and designed to enable kids, age 8 to infinity, to create their own apps and games. Because of the small and light form-factor of the iPad and the ability for kids to use native inputs (such as the microphone and accelerometer), Hopscotch gives learners an intimate relationship with their creations, one they can carry along with them and share with the world. Since its launch in April 2013, Hopscotch has been used by thousands of teachers, parents, and kids in more than 100 countries around the globe. In this workshop, members of the Hopscotch team will discuss some of the language design choices they made, and how and why Hopscotch differs from Scratch. Then you will get a chance to work through several getting-started projects and explore how you might use Hopscotch in your own educational programs.

Ignite Talks

Wolfgang Slany

How Kids Program Apps On Smartphones

This talk will showcase how and what kids program with Pocket Code, a system that is strongly inspired by Scratch, but runs directly on smartphones. The talk will describe experiences both in and out of schools, in both STEM and non-STEM classes, with students ages 13–18.

Bernat Romagosa, Laia Sánchez

Snap4Arduino

Want to get started with electronics? This talk will provide an introduction to "Snap4Arduino," a new software extension for programming sensors, motors, and other physical devices, developed by Citilab in Barcelona. Visit the Citilab poster session to try out Snap4Arduino.

Jens Mönig

Zombie-Oriented Programming in Snap!

Ever heard about "Zombiefication" in programming? This talk will introduce this brand-new concept, along with several other hot-off-the-press experimental features in Snap! (a modified version of Scratch).

Laia Sánchez, Bernat Romagosa

From Sensors to Builders

Find out how kids can develop apps using sensor data from their cities—and build physical devices that respond to the data. This talk will describe workshops that enable kids and adults to use the iCityProject API and SmartCitizen open-source kits to monitor their environment in user-friendly and innovative ways. The goal: to encourage governments to see kids and other citizens as active builders, influencing the environmental and information technology policies in their cities.

Joe Jones

Tinkering

Years ago, schools had a plethora of hands-on activities for students. Children in middle school were able to tinker, build, and work with their hands. Now, in order to save money and increase instructional time in Core Subject areas, many schools have eliminated the old programs of shop, home economics, and sewing. Middle school students do not get a chance to design, create, and build things. How can we bring this back to our schools? Scratch provides a path. Extending Scratch with LEGO WeDo robotics, PicoBoards, and other physical devices allows students to use their hands to build again. This talk will discuss projects that students developed when they were allowed to tinker for the joy of it.

Stephen Howell

Teach Programming with Scratch & Kinect

Get ready for a lively presentation of how and why to teach kids programming with a combination of Kinect and Scratch. The Kinect system can "see" a player's body, allowing control of computer games through body movements. The talk, by the developer of Kinect2Scratch, will bring together playing, joking, and coding.

Mike Chen

From Mouse to Multi-Touch: Scratch On Tablets

Touchscreen tablets have become an important educational tool, benefiting users ranging from toddlers to seniors. This talk will describe experiences in designing a Scratch user interface that is optimized for multi-touch interaction on tablets. Hear about the design decisions moving from mouse/keyboard interaction to touch interaction, and lessons learned in the process.

**Christopher Neeskens Flores,
Silvia Karina Maldonado**

Scratch, Robotics, Early Childhood: Bolivia

Is it possible to use Scratch and robotics not only to help children develop their gross and fine motor skills and their visual-spatial abilities, but also to raise their awareness about environmental issues? Two schools in the city of Santa Cruz, Bolivia, participated in a project to answer this question. They use LEGO WeDo robotics kits to develop "augmented reality" stories that happen in both the physical and virtual worlds. The stories engaged children's motor and visual-spatial skills, and also covered a range of environmental issues including endangered animals, recycling, the care of nature, and pollution. The talk will include some of the resources created by the children and teachers.

Panels

Stephen Howell, Connor Hudson, Kreg Hanning

Extending Scratch 2.0 with Strange Devices

AUDITORIUM 633

Scratch is jumping off the screen! This panel will describe and demonstrate how Scratch can be extended to connect with motors, sensors, and other devices in the physical world. See examples of what you can do when Scratch connects with LEGO robotics, Kinect, Leap, Arduino, and other external devices.

Crystal Williams, Lynne Keith, Beth Slade, Rachel Sulyok

Libraries: We Got an Itch for Scratch

RM 240

How can libraries support Scratch in their communities? Panelists will discuss how the Twinsburg Public Libary in Ohio established a collaborative relationship with Dodge Intermediate School to provide a Scratch programming club and three-week curriculum, sparking enthusiasm for computer programming in the school and community. The panelists will also present Scratch projects from their commuinty as well as videos of students discussing their experiences. During the session, you will get a chance to try Kidblog, a safe blogging website used in the library programs, to support discussion and access resources.

Yasmin Kafai, Quinn Burke

Connected Code

RM 525

This panel will introduce the conceptual framework of "computational participation" as an alternative to "computational thinking" for understanding children's making, sharing, and learning with digital technologies like Scratch. Panelists will argue that the manipulation and reconfiguration of digital content is not merely an intellectual activity (e.g., thinking) but a means to express oneself personally and a way to connect with others.

Workshops

Masahiro Yachi, Kaori Hashizume

Imaginative Animal Painter for ScratchJr

LEGO LEARNING LAB

Come try a prototype app that integrates Imagination Zoo and ScratchJr, enabling young children to paint creatures with Imagination Zoo then make their creatures come to life with ScratchJr programming. With Imagination Zoo, created by Japanese educational publisher Benesse, children can design their own creatures using virtual crayons, buttons, ribbons, and stickers, and then share them with friends all over the world. Imagination Zoo developers have been collaborating with the ScratchJr team so that Imagination Zoo creatures can be animated as ScratchJr characters.

Brian Harvey

Snap! Build Your Own Blocks

RM 244

Join a hands-on introduction to Snap!, a reimplementation of Scratch with first-class blocks and first-class lists, aimed primarily at teaching computer science to high school and college students. You'll get a chance to use Snap! to explore recursion, data manipulation with higher-order functions, and control of robots and other devices. **Bring your laptop!**

Ignite Talks

Ricarose Roque, Saskia Leggett

Family Creative Learning

What happens when you engage whole families in creative computing? Family Creative Learning is a workshop series that engages children and their parents in designing and inventing together with creative technologies like Scratch.

Will Davies, Henry Davies

Flat Scratch Cat Project

A big part of what the community loves about Scratch is the collaboration—meeting other Scratchers and remixing projects. In this talk, a team will describe their collaborative Flat Scratch Cat Project, inspired by the story of Flat Stanley, the boy who gets flattened and sent in the mail to have great adventures. Come to the talk and receive your own Flat Scratch Cat!

Derek Breen

Towards Gender Balance in Computer Science

An urban high school computer science teacher will share his secrets for increasing the student ratio of women to men from 1:5 in his first year to 1:1 in his second year.

Barb Manchee, Grant Turner

A Student Shares His Perspective

In 2011, as he was about to enter 6th grade, Grant Turner took a summer enrichment class on "Creative Thinking Through Game Design and Multimedia." Now ready to enter 9th grade, Grant will reflect on the benefits and challenges of his three-year experience with Scratch. He will discuss ways that Scratch has bridged his social world, personal interests, academic path, and career trajectory. One of his teachers will add pointers for integrating Scratch into the classroom and summer programs, discussing how student-created interdisciplinary Scratch projects can expose students to collaborative learning, peer instruction, mutual problem-solving, creative and critical thinking, and more.

Ingrid Gustafson

Making Room for Making

Is there room for maker culture in public schools? In this talk, an instructional technology specialist in Cambridge Public Schools will discuss her experiences introducing maker-inspired design activities involving Scratch, LEGO WeDo, littleBits, Pico Boards, and MaKey MaKey. The presentation will include discussion of how maker culture and school culture interact, project successes and struggles, and plans for the future.

Natalie Rusk, Catherine Feldman

What Motivates Scratchers

Many young people become highly engaged on the Scratch website—creating, sharing, communicating, and collaborating with each other. The Scratch Team wanted to better understand the reasons youth actively participate on the site, so it asked for projects responding to the question: "Why do you Scratch?" This talk will discuss themes that emerged from the 120 projects that young people shared, including the top five reasons for using Scratch—and the important role that friends, teachers, and family members play in motivating participation.

Dylan Ryder

Invent Your School

If your school's got a problem, let the students invent the solution! Hear strategies for engaging students in authentic problem-solving and engineering activities at schools. The talk will highlight example projects using craft materials, Scratch, low-cost sensors, and physical input devices such as MakeyMakey and LEGO WeDo—with special focus on the importance of teacher collaboration and project-based learning.

Alexis Cobo

Scratch in a Lower School Classroom

This talk will describe the transformation of the Technology Curriculum of the North Broward Prepatory School from archaic typing to innovative STEM assessments. Examples of the new curriculum include the use of Scratch to make video games as an end-of-unit assessment and the use of MaKey MaKey in an after-school program for advanced Scratchers.

Posters

Kartik Chandra

Snapin8r: Scratch to Snap! & Beyond

This presentation will demonstrate how to convert Scratch 2.0 projects to Snap! projects, using a tool called "Snapin8r." With Snap!, you can easily add a pause button to animations, for example, or edit projects on mobile devices. Other features of Snapin8r will be demonstrated, as well as exciting possibilites opened up by the new, open Scratch 2.0 format.

Kreg Hanning

Controlling Scratch with Leap Motion

This poster will introduce the software "Scratcher Control" and "Scratch 2.0 Plug-In for Leap Motion." Scratcher Control is a free app that enables connection of Android-powered devices to Scratch 1.4 and Scratch 2.0 (offline). The Leap Motion plug-in allows control of Scratch projects through the motion of hands and fingers. Come to the poster to explore the software with sample projects.

Xabier Basogain, Juan Carlos Olabe

Exploring Cybernetics in K–12 Classrooms

Consider this Scratch challenge: "Create and animate a butterfly that has the ability to fly and detect collisions with walls. The butterfly must live inside a greenhouse divided into 16 rooms interconnected with open doors, and it must be able to fly into all the rooms." Cybernetics problems like this (that is, problems involving the behavior of systems) are rarely introduced in K–12 classrooms. But Scratch provides an opportunity for students to explore cybernetics concepts and ideas. This poster will show how cybernetics can be introduced into the classroom — and what students learn as they tackle complex systems problems with Scratch.

Derek Breen, Daniel Wendel

Imagine if Scratch Were 3D

The Education Arcade will present the new, web-based version of StarLogo. Users of Scratch can transfer their blocks-based programming skills to StarLogo Nova, where they can create games, simulations, and interactive art projects in a 3D virtual space. Members of the development team will not only showcase the new app, but will also demonstrate the ease of transitioning from Scratch 2.0 to StarLogo Nova programming techniques.

Steve Ciampaglia

Creating 8-Bit Art Games with Scratch

This poster will showcase the results of two courses in which students created 8-bit art games — video games designed to emphasize art, often featuring subversions of typical commercial gaming structures and conventions. Since many art-game designers embrace a low-fi 8-bit aesthetic and simplistic game play that harkens back to the heyday of the Atari 2600, Scratch is an ideal programming environment for creating these games. Come view initial hand-drawn concept drawings and play with the final games produced in art-game courses at an after-school class for middle school students and an Art+Tech course for pre-service art teachers.

Guatham Dayal, Geetha Narayanan, Lavanya Sahi

Art & Design Students

Is it better to view computers as tools for accomplishing tasks efficiently — or as a material (like clay, wood, or paper) that we can use for designing, creating, and expressing ourselves? In this poster, two instructors from the Sristhi School of Art, Design, and Technology in Bangalore, India, share their experiences introducing computers as a new type of material in introductory courses for college design students. In their courses, they interweave programming with the making of physical objects, so that students can see programming as a way of making with computational materials.

Gabriela Degiampietro

Kids Scratching to Help Other Kids Learn

Find out what happened when students in upper elementary grades in Buenos Aires were asked to design a game for younger students (K–2) with the goal of helping them understand money. Students learned not only math concepts, algorithms, and design phases of software development, but also strategies for resolving problems and working collaboratively. The final Scratch game will be shown in this poster session, along with videos that document different development phases of the project.

Sehnaz Baltacı Göktalay, Zulfu Genc, Nese Erses

Two Case Studies From Turkey

This poster will present experiences of educators and students using Scratch at two public universities in Turkey to teach basic computing concepts. Educators examined the relationship between the students' problem-solving skills and motivation (dependent variables) and their gender and previous programming experience (independent variables). The poster will also discuss current Scratch-related research and events in Turkey.

Posters

Connor Hudson

Blockext Hardware Extensions

Want to connect your robot to Scratch? Blockext is an easy way to write "extensions," or new programming blocks that extend Scratch. This poster will demonstrate several extensions made with Blockext.

Jungmi Hong, Heejeong Seo,
Soohwan Kim, Seonkwan Han

Smart Educational Robot with Scratch

The word "Atti" in Korean means close friend or buddy. This poster introduces a smart robot named Atti as an education buddy for preschoolers. A smartphone functions as Atti's brain, reading and interpreting books out loud for children. When kids point to words in a special storybook with a 'magic wand,' they can enjoy a rich "augmented reality" experience such as the meaning and pronunciation of the words as well as multimedia examples. Most of all, elementary school students can learn Scratch programming with Atti: They can build scripts to move the Atti robot forward or backward, right or left, or react to the robot's sensors.

Stephen Howell

Reflections on "Scratch from Scratch"

In 2012, Seamus O'Neill and Stephen Howell released part one of their textbook "Scratch from Scratch." It sold out quickly, and the co-authors used classroom feedback to start work on a follow-up text for Scratch 2.0. In this poster, you will have the opportunity to make suggestions based on your own experiences with Scratch in the classroom.

Inés Friss de Kereki, Víctor Paulós

SM4T: Scratch MOOC for Teens

This poster will discuss a Scratch-based MOOC (Massive Open Online Course) for high school students in Uruguay, designed to stimulate the development of procedural thinking and problem-solving skills. The five-week course, which introduced programming concepts in the context of creating computer games, included short videos, quizzes, self-assessment tests, and Scratch code samples. More than 1,000 teens enrolled, mostly from socioeconomically disadvantaged areas. Called SM4T (Scratch MOOC for Teens), the course was a collaboration between the Universidad ORT Uruguay and Plan CEIBAL, a government project that provides free laptops and internet access to students and teachers in public schools.

Steve Martin

Simulating Science with Scratch

This poster will present science simulations that students have made in Scratch. The task of creating simulations often reveals interesting student misunderstandings about the systems being studied. Examples will include: a simulation of earth-moon positions and how they are related to the phases of the moon seen from Earth (Grade 6); a simulation of a beating heart (Grade 8); and a simulation of osmosis (Grade 8).

Tiffany Navarro

Scratch Curriculum for Mexico

Learn about a Scratch curriculum developed by a Mexican-American educator who is bringing Scratch to underserved communities in Mexico, aiming to bridge the digital divide in a country where 57 percent of the people do not have access to the internet. The poster will discuss how the curriculum engages children in creative activities with new technologies—in particular, helping them learn to program video games, animations, and animated stories in Scratch.

Nobuko Kishi, Manabu Sugiura, Kazuhiro Abe, Stephen Howell

Introducing New Input Devices in Hands-On Workshops

A variety of input devices are now available for Scratch: Kinect, Leap Motion, web cameras, and touch screens. This poster will share strategies for introducing these new devices to students of different ages: a "black box" approach for elementary school students, a "white box" approach for middle school students, and an engineering approach for high school or college students.

Wolfgang Slany, Lukas Radacher

Pocket Code: Programming For Smartphones

Pocket Code allows kids to program directly on their smartphones. It is very similar to Scratch, strongly inspired by it, and increasingly compatible. Pocket Code is freely available on Google Play for Android, and new versions are under development for iPhones, Microsoft Windows Phones, and HTML5-enabled mobile browsers. Come see the newest versions of the software, including ongoing work with robots, Bluetooth communication, a converter for Scratch projects, and more.

Posters

**Barb Tennyson, Karen Garrison,
Karen Eutemey**

Cross-Curricular Integration of Scratch

At the Chestnut Hill School in the Boston area, Scratch isn't confined to computer and robotics classes. Students use Scratch in science, Spanish, social studies, and art classes too! At this poster, teachers and students from the school will demonstrate Scratch projects from across the curriculum.

Ursula Wolz

Making it Your Own Through Agile Design

For Computer Science Ed Week last year, a group of a dozen teachers and 40 students at Mt. Hebron Middle School in Montclair, NJ, planned and implemented a set of robotics challenges to be used throughout the school. Teachers proposed experiences that resonated with their subject areas, and students formed development teams to explore feasibility and implement the proposed activities. The result of this "agile design" process was a four-day event reaching 60 teachers and 600 students, including robotics activities involving dance, music, art, sports, and theater. This poster will draw on the experiences in the Mt. Hebron initiative to provide strategies for applying agile design for customized curriculum design.

Tomohito Yashiro, Kazushi Mukaiyama

Material Programming

Can you imagine your family sitting in the living room after dinner, stacking towers of blocks as a way to program your home automation systems? That's one of the visions of "material programming," in which real, physical blocks are used as a programming environment. A scanner reads QR codes on the blocks and converts them to a program executed on a PC. The poster will report on pilot projects in which children used material programming to control virtual and robotic cars.
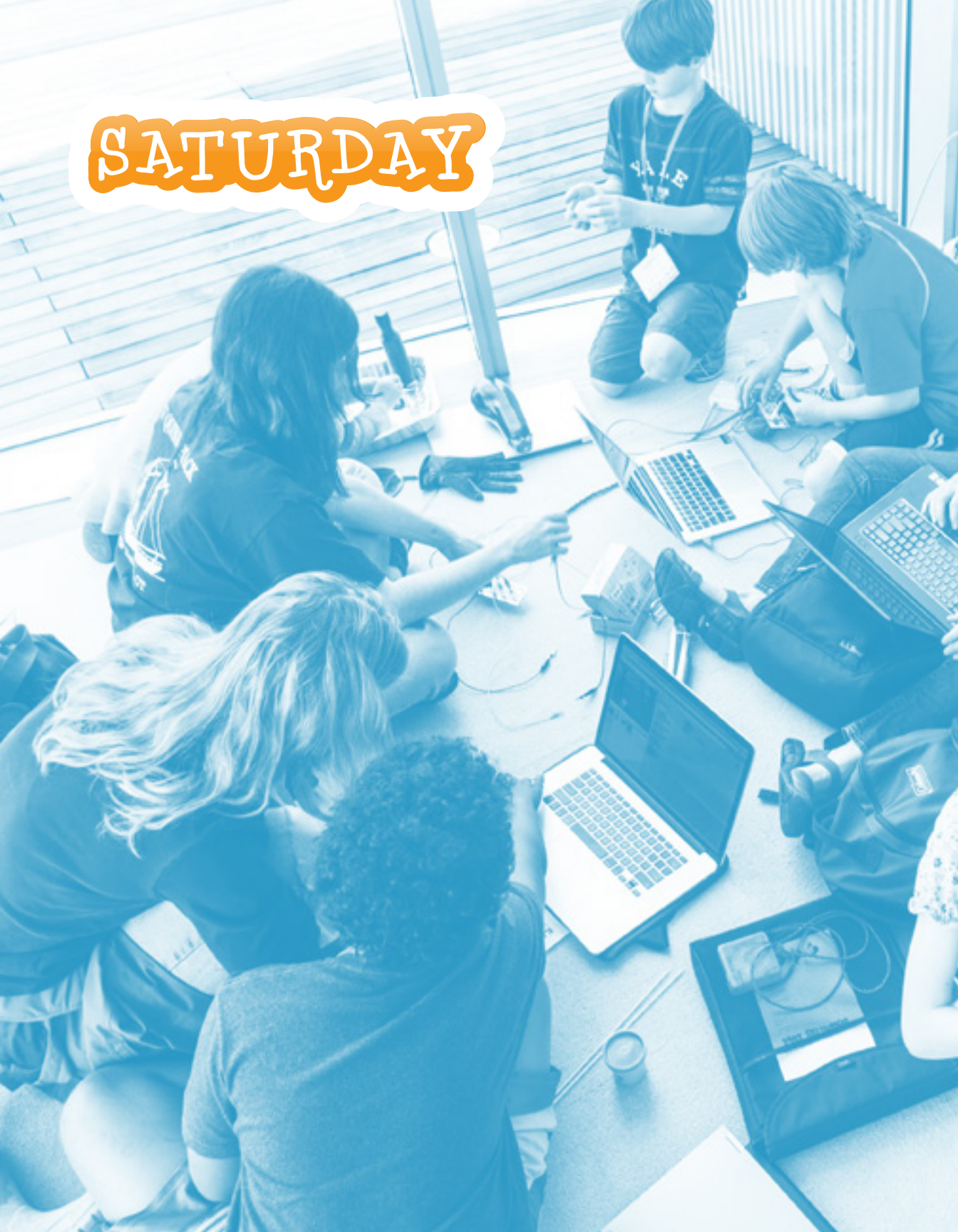
Bernat Romagosa, Laia Sánchez

Scratch at Citilab

Citilab in Barcelona has been developing a wide range of Scratch-related products and resources over the past seven years. Come see demonstrations of S4A, Snap4Arduino, SmartCity Hands-On Workshops, and other creations from Citilab.

SATURDAY

Scratchers Helping Scratchers

Meet three long-time Scratchers who have played active roles in improving the Scratch online community. **Sarah Otts** (scmb1), Joren **Lauwers** (JSO), and **Linda Fernsel** (LiFaytheGoblin) will discuss why they started Scratching, how they became more involved, and what they have learned in the process. Facilitated by Natalie Rusk and Eric Schilling from the MIT Scratch Team.

Today's Schedule

Breakfast	8:30 a – 9:30 a
Keynote: Scratchers Helping Scratchers	9:30 a – 10:30 a
Break	10:30 a – 11:00 a
Panels, Workshops, & Ignite Talks	11:00 a – 12:00 p
Lunch & Closing Plenary	12:00 p – 1:30 p

Panels

MIT Scratch Team

What's Next for Scratch?

AUDITORIUM 633

Scratch continues to evolve and grow. At this session, members of the MIT Scratch Team will discuss what's on the horizon for Scratch — and how you can contribute. See prototypes for a new tablet version of Scratch and special accounts for educators. Learn about new entry paths for Scratch beginners — and new possibilities for advanced Scratchers through Scratch extensions and data-programming blocks. Come share your feedback and suggestions!

Aileen Owens, Melissa Unger, Shad Wachter

Let the Magic Begin: Transform Your World

RM 525

In 2010, the only computer programming class taught in the entire South Fayette Township School District in Pennsylvania was a high school Visual Basic course. But when eight girls learned Scratch in an after-school Girls STEAM Team, it sparked a change. Four years later, computational thinking has been systematically incorporated into K–12 education throughout the entire district, reaching 1,500 students by embedding Scratch in the K–7 curriculum. The district now supports a wide range of programming activities, including robotics projects, after-school Scratch Clubs, family programming events, collaborations with schools in Mexico, and an Inspire Speaker Series. Through support of The Grable Foundation, South Fayette has been building sustainability of its model in two underserved school districts. At this session, under the guidance of panelists, create your own roadmaps for innovation and transformation.

Workshop

Steve Ciampaglia, Kerry Richardson

Scratching Deeper:
Expanding Accessibility

RM 240

Panelists will discuss their experience teaching Scratch in racially and economically diverse communities in the Chicago area, where they have noticed a marked discrepancy in Scratch use and awareness between different groups. While the white, middle-class students often arrive for classes with Scratch experience, very few of the low-income African-American and Latino students have even heard of it. Libraries in these communities offer free web access, so accessing Scratch online is not the issue. New approaches to increasing awareness of and engagement with Scratch in underserved populations are necessary. Panelists will discuss strategies they have developed through their work with The Plug-In Studio (a self-contained, portable Scratch classroom) and they will invite audience members to share their own stories and successful engagement strategies.

Wolfgang Slany, Lukas Radacher

Learn How to Create
Apps for Smartphones

RM 244

Bring your Android phone to develop games, animations, and other apps using Pocket Code, a programming language inspired by Scratch that is freely available on Google Play. Experiment with creating apps that use your phone's sensors, the multi-touch screen, and the physics engine built into Pocket Code. Learn to program jump-and-run or Angry-Birds-style games. You'll be able to create your first app in less than 60 seconds — and then share it with the Pocket Code online community.

Ignite Talks

Linda Sandvik

Code Club: Hacking the Future

Learn how Code Club has organized a network of thousands of free, after-school coding clubs across the United Kingdom, engaging more than 30,000 children, aged 9–11, with Scratch.

Claude Terosier

Best Practices for Engaging Kids

This talk will present best practices for engaging kids during creative computing sessions. Examples will draw upon ideas from the ScratchEd Team curriculum, including debug activities, project examples, and design notebooks.

Z. Zhong

The Impact of Scratch on China's Education System

This talk will showcase the successful implementation of Scratch in high schools and vocational schools in China. It will discuss a collaboration with the Shenzhen Bureau of Education to provide training sessions for more than 300 teachers and educators, in hopes of promoting the use of Scratch throughout China.

Alberto Barbero

Scratchin' Italy

The Italian Regulatory Reform of 2010 required that information technology, computer logic, and basic programming concepts be introduced in the first year of secondary school (high school). This resulted in a rapid increase in the use of Scratch, which is known in Italy as one of the most important educational tools for problem-solving and basic computer programming. The Italian Scratch Festival, a contest that promotes the study of computer programming by rewarding the best Scratch projects, is now in its third year. This talk will discuss the successes to date as well as the new goal to bring Scratch to junior high schools to introduce younger students to coding.

Manabu Sugiura

BVH Character Animation Files for Scratch

Learn about a tool that allows kids to animate their sprites to dance like their favorite celebrites! Many animators use the Biovision Hierarchy (BVH) character animation file format, which stores motion-capture data to create more realistic animations of characters. But using BVH files can be challenging for children. This talk will demonstrate a helper application that makes it easy for kids to create Scratch animations from BVH files, so that they can make characters move, jump, and dance realistically. For example, kids can program sprites to dance like Japan's famous "Perfume" pop girl group, using BVH files from the "Perfume Global Site Project."

Eduard Muntaner Perich, Jordi Freixenet, Mariona Niell, Xavier Cufí

Inventors4Change

Inventors4Change is a network of schools and organizations that aim to foster Invention-Based Collaborative Learning among children from underserved communities around the world. This talk will discuss results from a pilot project involving two schools in South India and two in Catalonia, Spain. The participating schools in India teach the most disadvantaged children of India's lowest caste, the so-called "untouchables." The schools in Spain teach children of immigrant families with very low socioeconomic status. The organizers of the project designed mixed teams of children from both India and Spain and asked the teams to invent an animated story related to the issue of Children's Rights.

Arteesha Bosamia, Matthew Healey, Thomas Preece

What We Learned Whilst Teaching Scratch

Technology Volunteers is an initiative where programmers and non-programmers work together to teach Scratch to children. With a live demonstration of ideas, this presentation will show how this cross-disciplinary team at University of Warwick in England brings a valuable range of perspectives to teaching Scratch. It will describe the impact Scratch has had on children in the local community, and it will discuss the impact the experience has had on project leaders.

Dan Garcia

Using Snap! to Teach the Big Idea of "Data"

The upcoming Advanced Placement "Computer Science: Principles" course has, as one of its seven Big Ideas, the subject of "Data." This talk will explore how to teach the concept of Data through a programming-centric approach using the Snap! modified version of Scratch.

John Avitabile

Shakespeare and Scratch

Elementary Education majors at the College of Saint Rose use Scratch for theater projects! This talk will show what happened when students used Scratch to animate a scene from a Shakespeare play and then to create a scene that they themselves had written.

MIT Museum

MIT Media Lab

Mass. Ave

Mass. Ave

Main St

State St

Cherry St

Windsor St

Windsor St

Osborn St

Main St

Washington St

Harvard St

Broadway

Market St

Broadway

Albany St

Vassar St

Portland St

Main St

Technology Sq

Broadway

Main St

Bristol St

Ames St

Galileo Galilei Way

Broadway

Galileo Galilei Way

Amherst St

Thank You

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SCRATCH ON!