Coding in the library

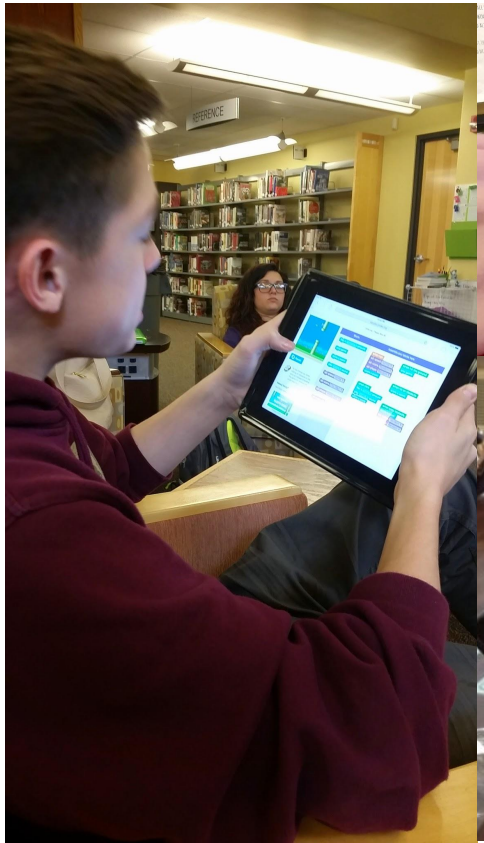
Before we begin, try decoding the binary message on the back of your handout.

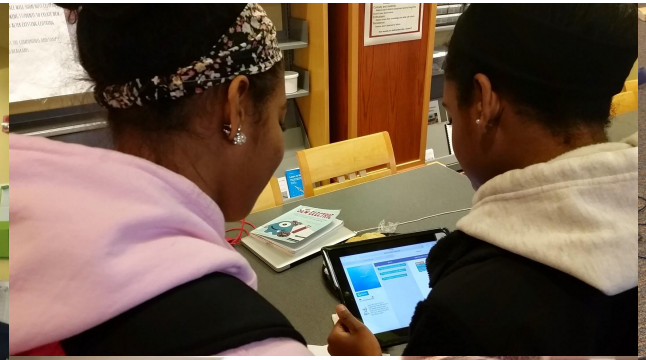
Connecting to WiFi here:

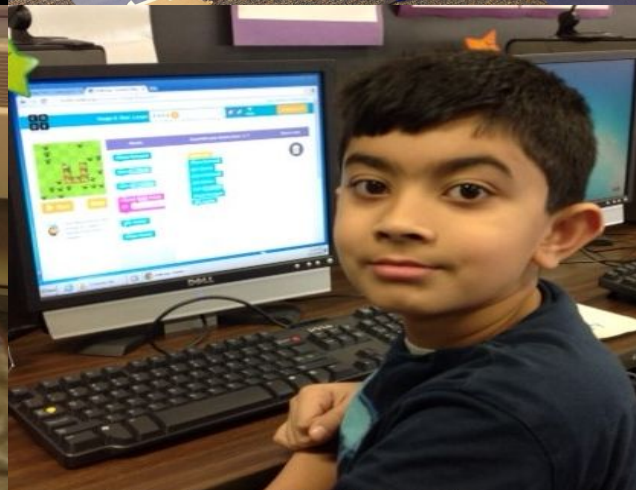
1. Open www.kutztown.edu in your browser
2. You should be prompted with the WiFi login screen.
3. Username and password (case sensitive)
    a. Username: PALA19MAY
    b. Password: PALibr@ry

Sara Frey
sfrey@colonialsd.org

Promoting coding in the library







Coding in the library

Considerations as we explore today:

- ~~Reader~~ ***Coder's*** Advisory

- Programming Opportunities

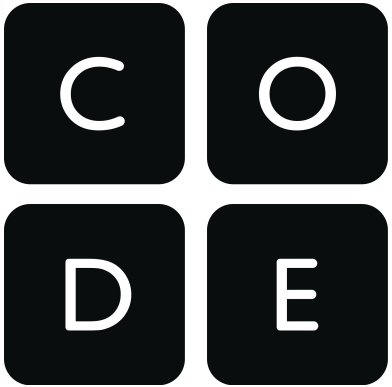
Coding in the library

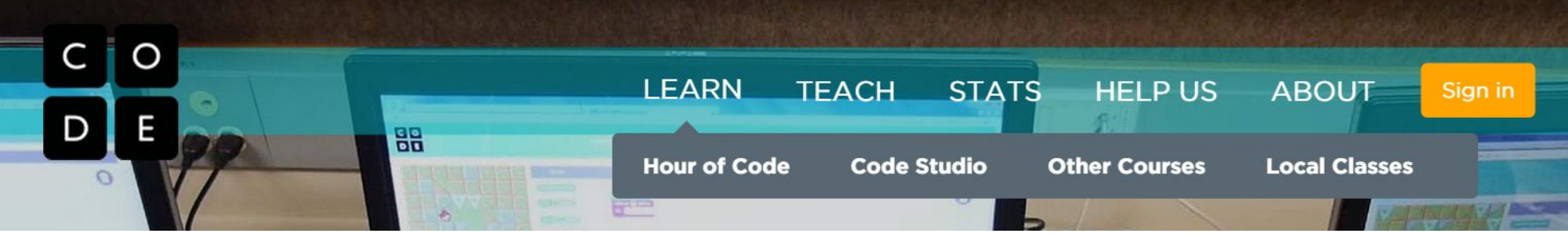
Considerations

- Patron’s age and skill level
- Platform
  - Do you have computers? Tablets?
- Cost
- Providing support
  - Hosting a class or a club? Just sharing resources?

Code.org

- Optimized for ALL devices - check it out on a PC, laptop, tablet or phone!
- Founded the now famous **Hour of Code** promoted by President Obama, pop culture celebrities and notable comp. sci. faces including Bill Gates & Mark Zuckerberg
- Growing collection of gamified lessons and stand-alone activities
- Massive collection of educator's materials can be used in library programming





Hour of Code

*Create an account to save your progress!

Begin coding with Frozen, Star Wars, Angry Birds and other popular characters.Each activity begins with a video clip with a quick introduction and tips.

Code Studio: Go beyond the Hour with more activities

Other Courses: Browse the lessons & activities

Local Classes: Find Code.org events in your area (libraries can host!)

Welcome back, Sara Frey

Teacher Home Page

Where you left off: **Stage 2: Maze Puzzle 5** Continue

Projects

View My Projects

Create a new project: **Make an App** **Draw Something**

COURSES YOU'RE WORKING ON | ALL COURSES

Course 3

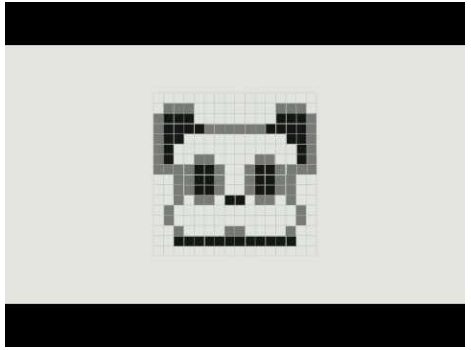
Continue

Stage 1: Computational Thinking View Lesson Plan	Unplugged Activity	✓ ✓
Stage 2: Maze View Lesson Plan	✓ ✓ ✓ ✓ 5 6 7 8 9 10 11 12 ✓ ✓ ✓	

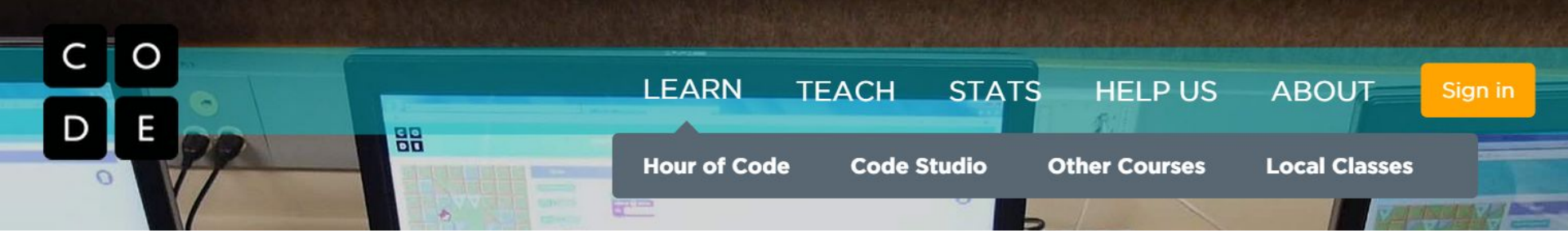
Code.org's Youtube channel

- Common terms & functions explained

- Celebrity promotional clips

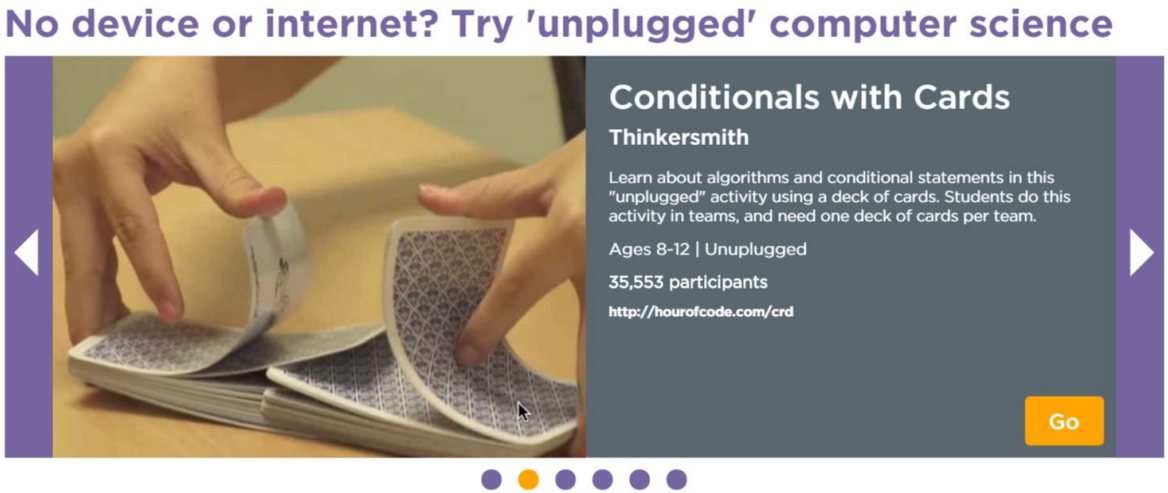


- Instructional videos, including unplugged activities

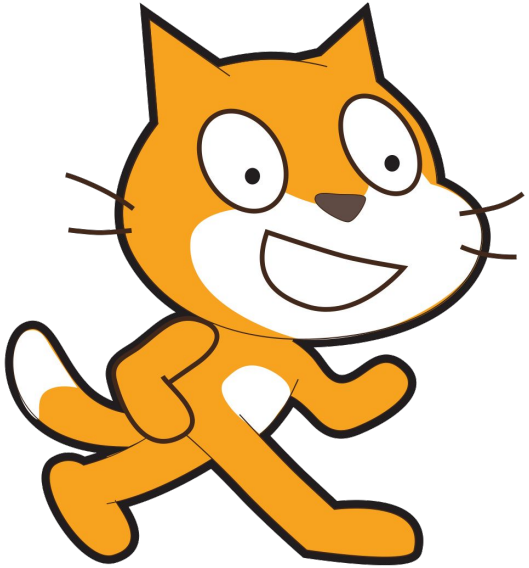


Don’t miss out on UNPLUGGED activities!

These games and activities do not require Internet access.
In some cases, you don’t need any computers/devices at all.



Scratch.MIT.edu

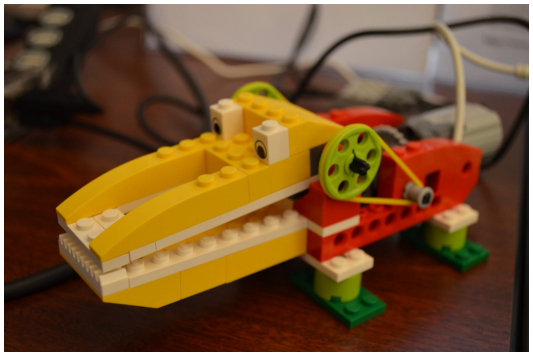


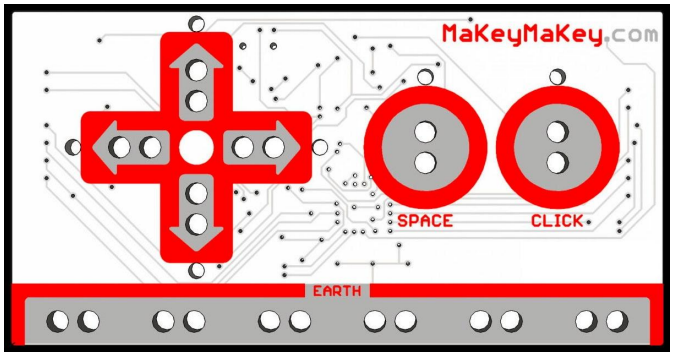
Scratch.MIT.edu

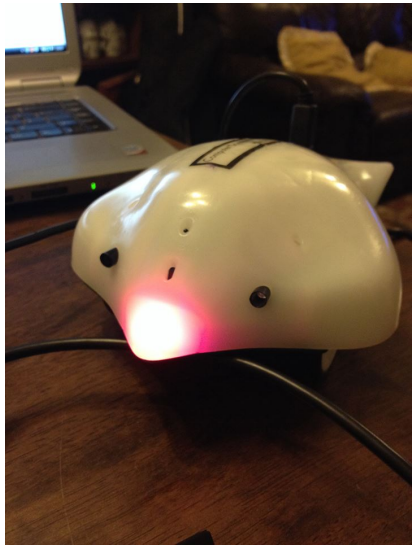
- Free online, software download, and iOs app
- Drag and drop blocks to make animated videos, games and more
- Copy and remix projects created by others
- Similar to Code.org, Scratch has an educator's portal full of resources including PDF versions of a teacher's guide and a student's guide

Scratch.MIT.edu

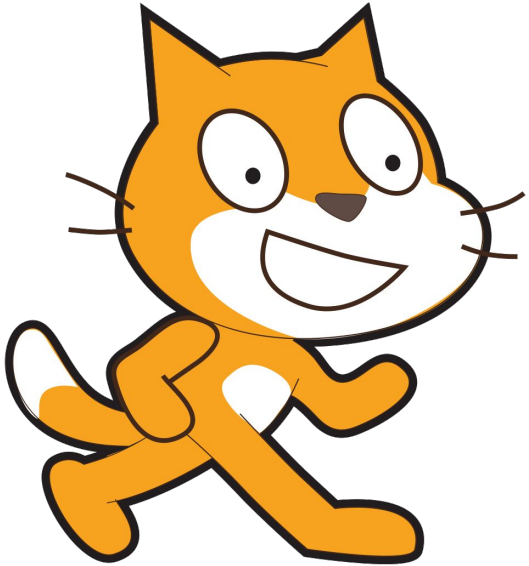
- Connect to / control lots of devices including
  - Finch Robot
  - MaKeyMaKey
  - Lego weDo





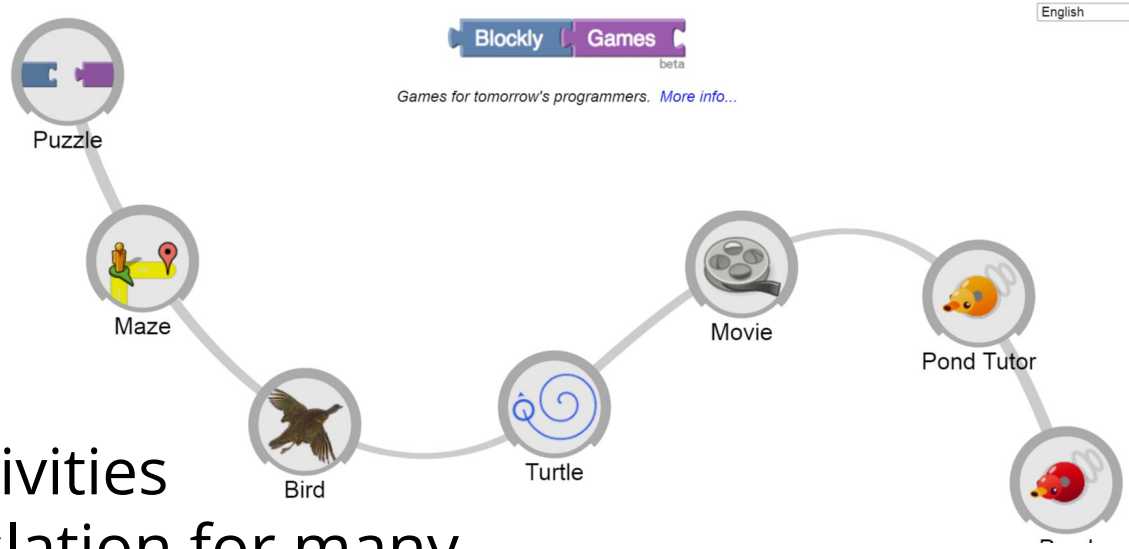


Scratch + Finch



BirdBrain loans out
packs of Finches to libraries!
Apply!

Blockly



- Drag and drop activities
- Built-in page translation for many languages
- Can be downloaded for offline use
- Can be used with Google's AppInventor to create apps for Android devices

Google: CS First & Made with Code

- MadewithCode.com
  - Quick, drag and drop activities

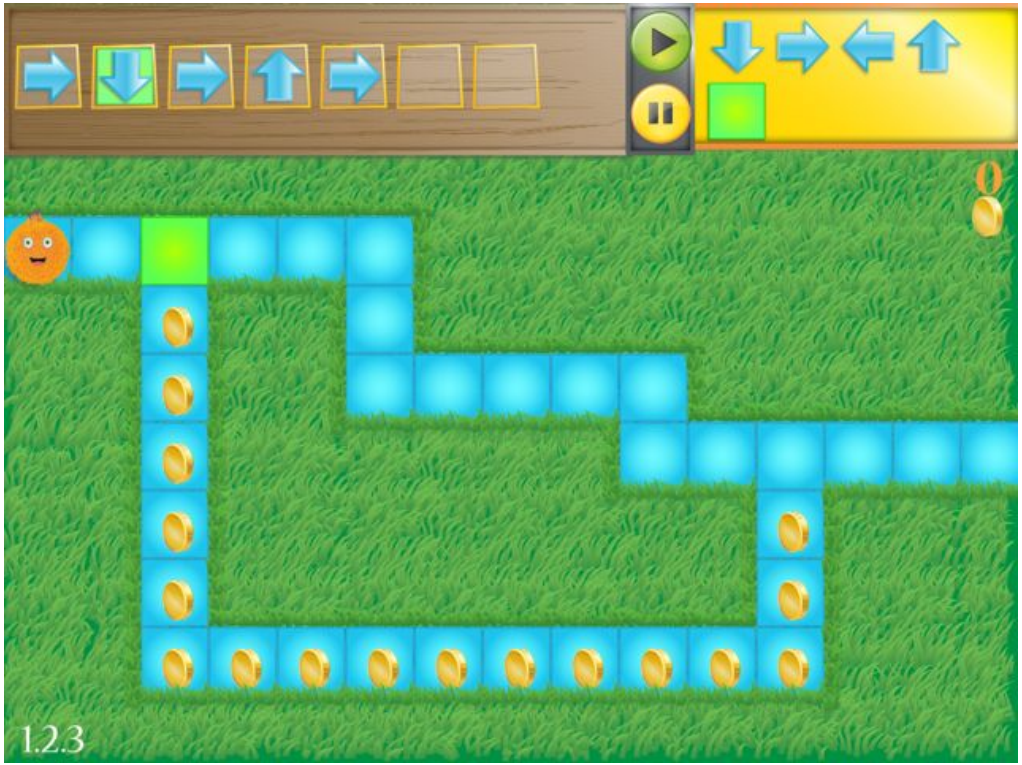
- CS First
  - Materials and resources to start a coding club
  - Recommended for ages 9-14

Want more?

Young coders

App	Price	Device	Notes
Kodable	$$$	Web, iOs, Android	Drag & drop commands Designed as a curriculum game-based with levels
Daisy the Dinosaur	Free	iOs	Drag & drop commands Game-based with levels
Scratch Jr.	Free	iOs, Android	Drag & drop commands Project-based
Lego weDo	$$$	PC/Mac software	Drag & drop commands Designed as a curriculum project-based levels
Lego Mindstorms	$$$	PC/Mac software	Drag & drop commands Designed as a curriculum project-based levels

Kodable



Scratch Jr.

Daisy the Dinosaur

commands

- turn
- grow
- shrink
- jump
- roll
- spin

program

- repeat 5
  - move Forward
- grow
- grow
- jump

Play

Menu

stage

Want more?

Tween coders

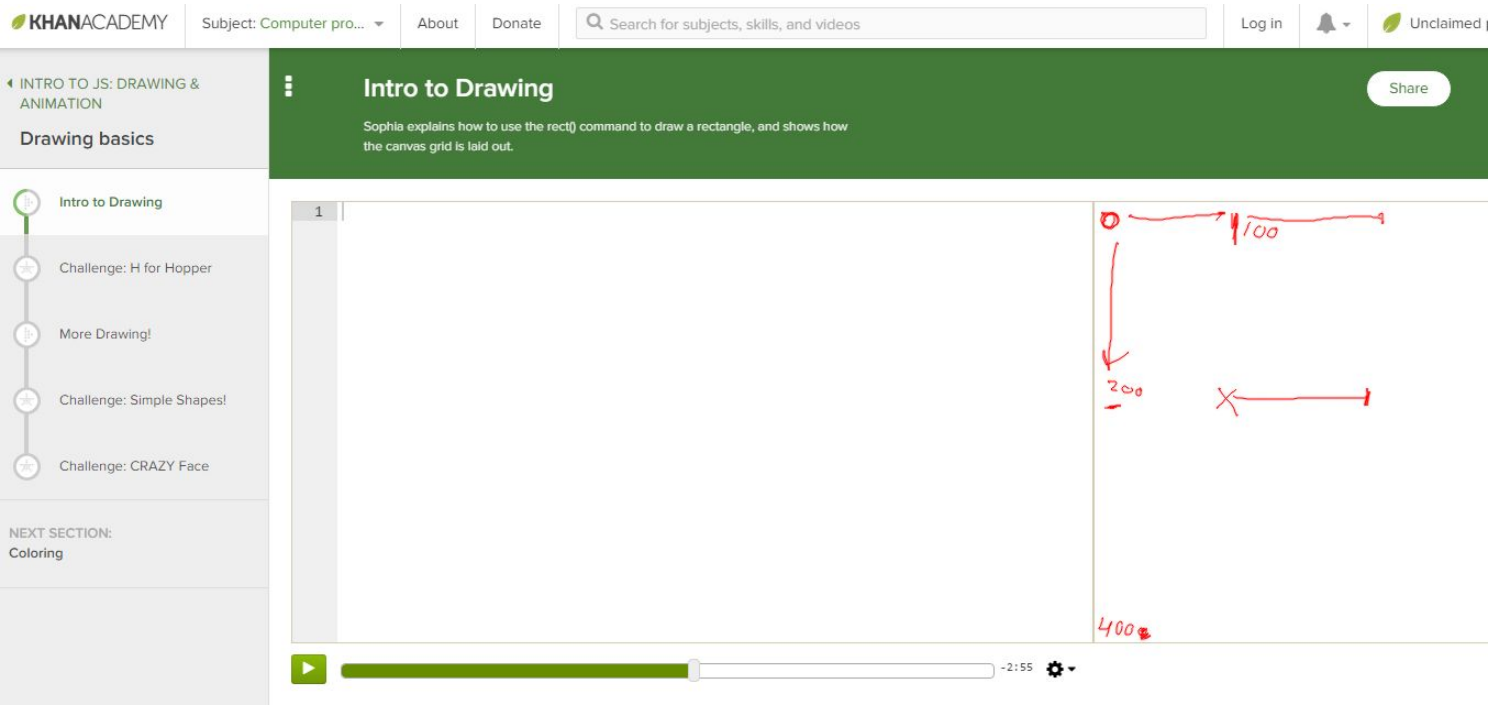
App	Price	Device	Notes
Lego Mindstorms	$$$	PC/Mac software	Drag & drop commands Designed as a curriculum project-based levels
Khan Academy	Free	Web-based	Choose from HTML/CSS, JavaScript, or Python
Code Avengers	Free / $$$	Web-based	Choose from HTML/CSS, JavaScript or Python
Code Combat	Free	Web-based	Game-based Choose from JavaScript or Python

Code Combat


LEVEL
GEMS IN THE DEEP
GAME MENU
CURRENT METHOD
PLAN
1 # Grab all the gems using your movement commands.
2
3 self.moveRight()
4
RUN
Help
self.moveDown()
self.moveLeft()
self.moveRight()
self.moveUp()


CODE COMBAT

Khan Academy



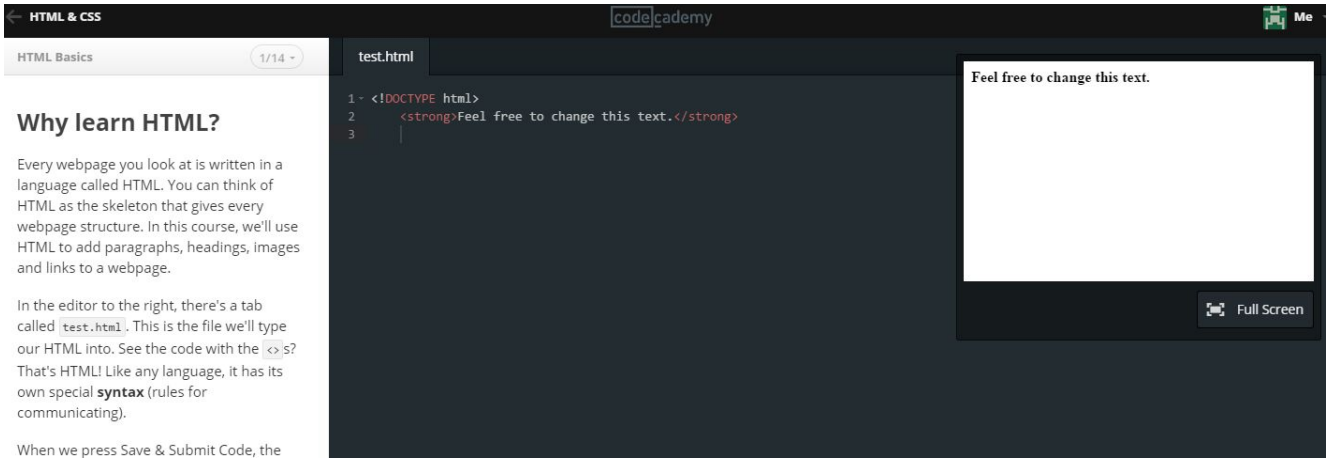
KHAN ACADEMY

Want more?

YA & older coders

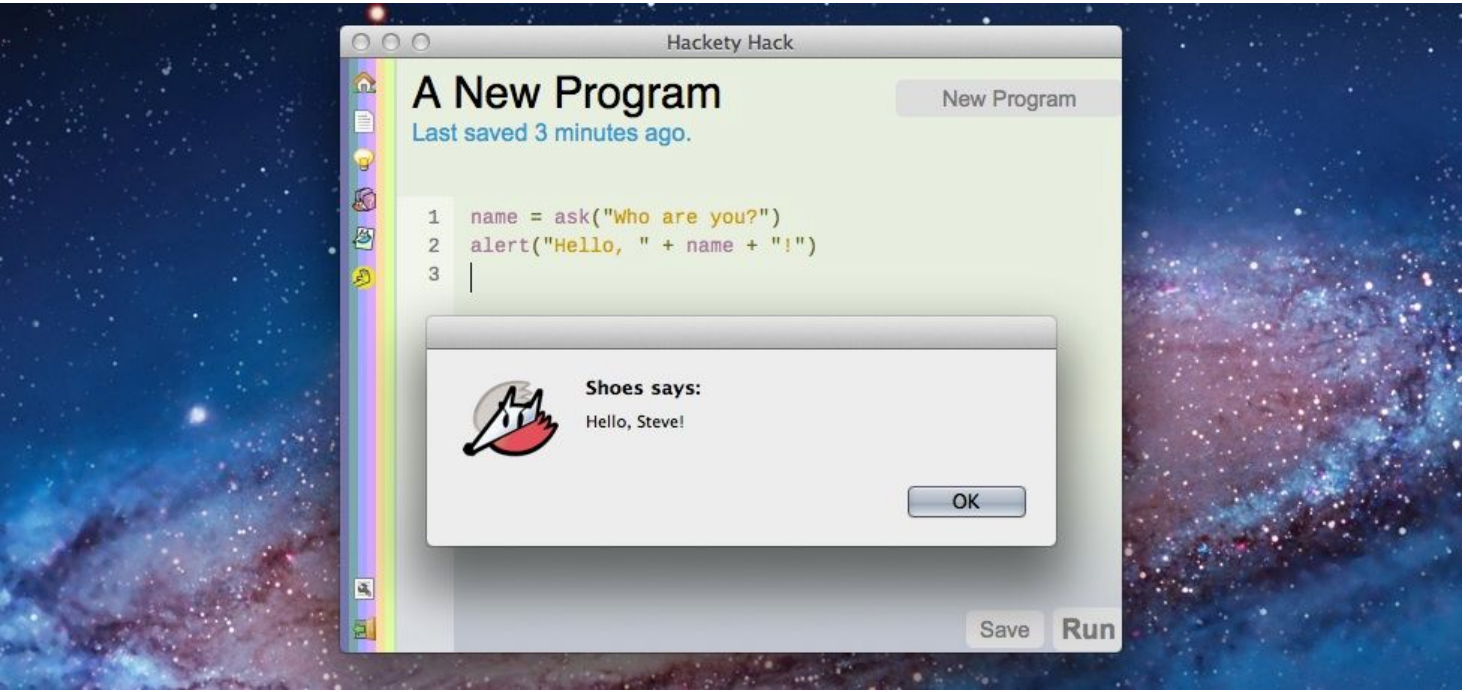
App	Price	Device	Notes
Khan Academy	Free	Web-based	Choose from HTML/CSS, JavaScript, or Python
Code Avengers	Free / $$$	Web-based	Choose from HTML /CSS, JavaScript or Python
Code Combat	Free	Web-based	Game-based Choose from JavaScript or Python
Code Academy	Free	Web-based	Choose from HTML/CSS, JavaScript or Python
Hackety Hack	Free	Software download	Ruby

Code Academy

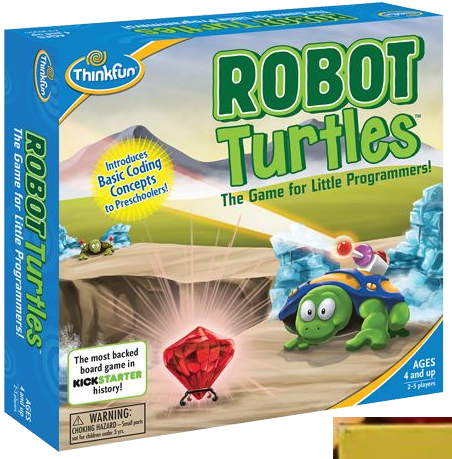


codecademy

Hackety Hack

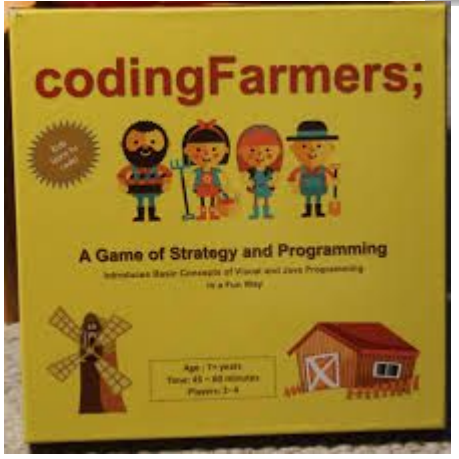


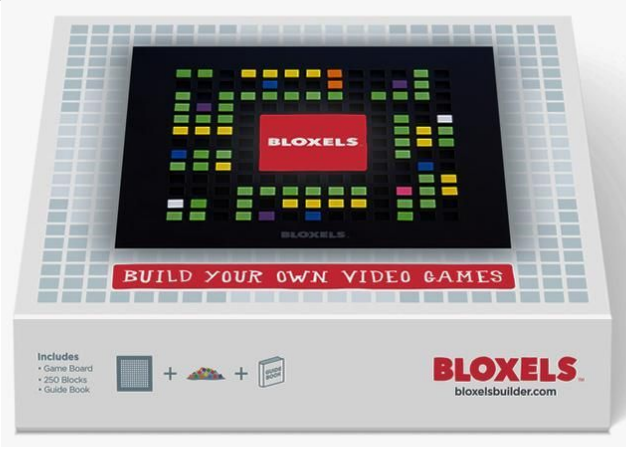
Get offline!


Thinkfun
ROBOT Turtles
Introduces Basic Coding Concepts to Preschoolers!
The Game for Little Programmers!
The most backed board game in KICKSTARTER history!
WARNING: CHOKING HAZARD – Small parts.
AGES 4 and up
2-5 players


Welcome to
CODE MONKEY
ISLAND
The game of programming, monkeys, & fun
45 - 60
2 - 4
8+


Thinkfun
60 Beginner to Expert Levels!
CODE MASTER
PROGRAMMING LOGIC GAME
Ignite Your Mind!
AGES 8 to adult
single player

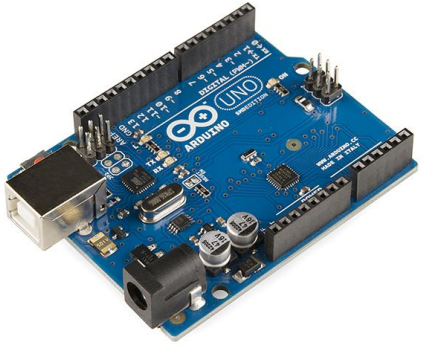

codingFarmers;
A Game of Strategy and Programming

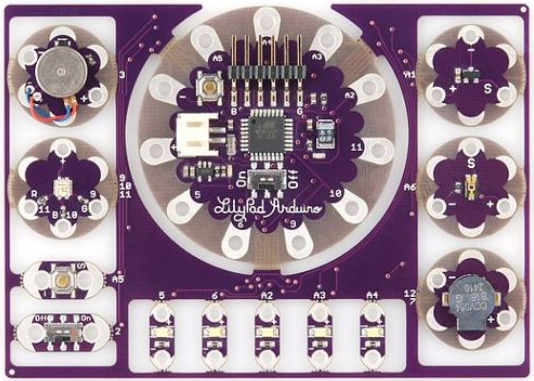

BLOXELS
BUILD YOUR OWN VIDEO GAMES
Includes
• Game Board
• 250 Blocks
• Guide Book
BLOXELS
bloxelsbuilder.com

Get physical!

Investigate these resources to program physical devices:

- Arduino
- Arduino lilyPad
- Raspberry Pi
- Sphero robot



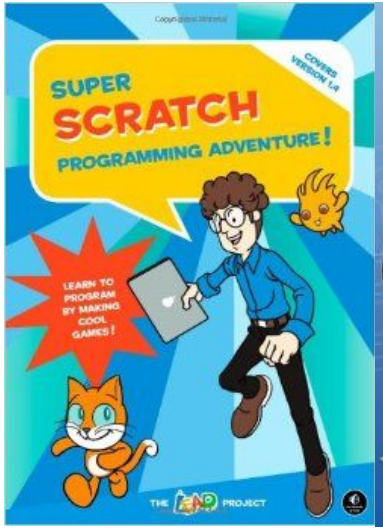


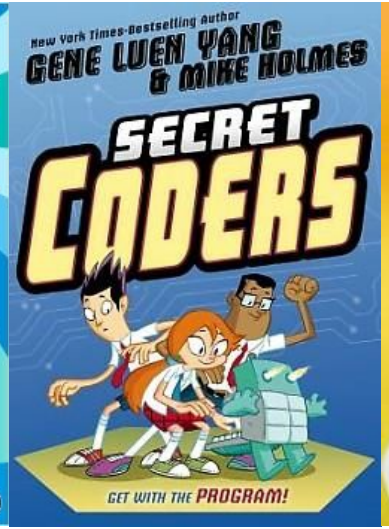
ARDUINO

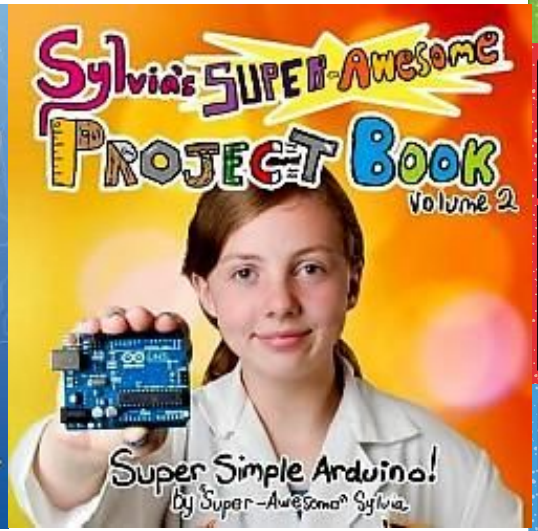
LilyPad

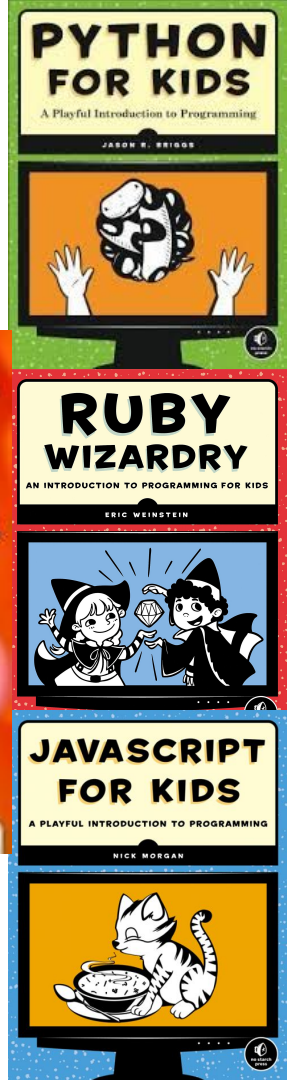
Get reading!


Make:
technology on your time
JOIN THE
ARDUINO
REVOLUTION
MAKE STUFF SMART!
Make This
HELICOPTER
ROCKET
3 Hours, Start to Launch!
O'REILLY
makezine.com


SUPER
SCRATCH
PROGRAMMING ADVENTURE!
LEARN TO PROGRAM BY MAKING COOL GAMES!
THE END PROJECT


New York Times-Bestselling Author
GENE LUEN YANG
& MIKE HOLMES
SECRET
CODERS
GET WITH THE PROGRAM!


Sylvia's SUPER-Awesome
PROJECT Book
Volume 2
Super Simple Arduino!
By Super-Awesome Sylvia


PYTHON
FOR KIDS
A Playful Introduction to Programming
JASON R. BRIGGS
RUBY
WIZARDRY
AN INTRODUCTION TO PROGRAMMING FOR KIDS
ERIC WEINSTEIN
JAVASCRIPT
FOR KIDS
A PLAYFUL INTRODUCTION TO PROGRAMMING
NICK MORGAN

Time to explore!