



Richard Le  
San Francisco Public Library

# CODING:

THE NEW LITERACY FOR THE  
DIGITAL AGE



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San Jose State University



# WHAT IS CODE?

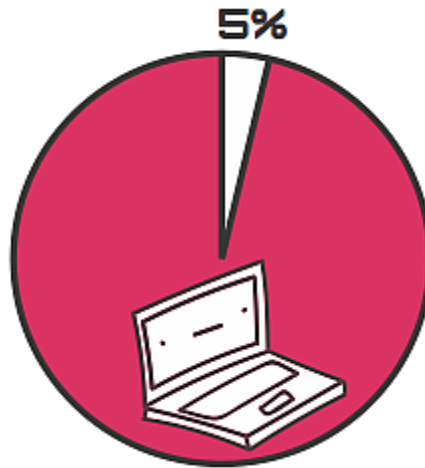
Code is a tool that will allow you to do the things you've always wanted to do.



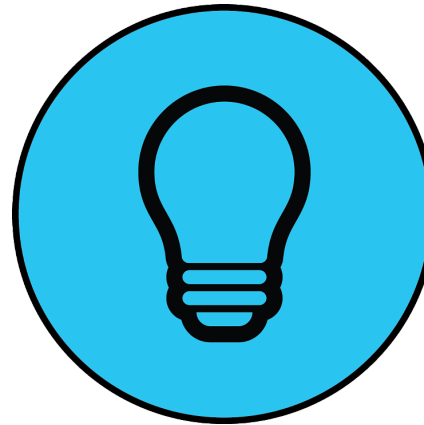
# WHY CODE?



practical



social



creative



critical

# WHY CODE IN LIBRARIES?



Values: Common core alignment



New literacy and standard for success in life



Relevancy of libraries: community building

# CODE AT LIBRARIES



**Summerlin  
Public Library**



**Chattanooga  
Public Library**



**San Francisco  
Public Library**



**Bentonville  
Public Library**



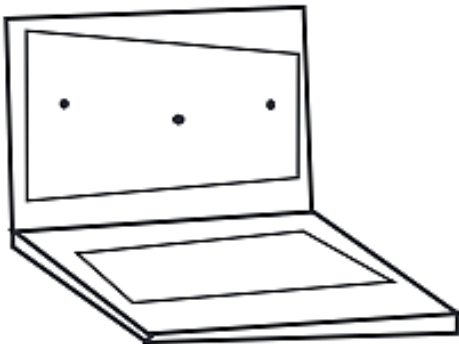
**Homer Public  
Library**



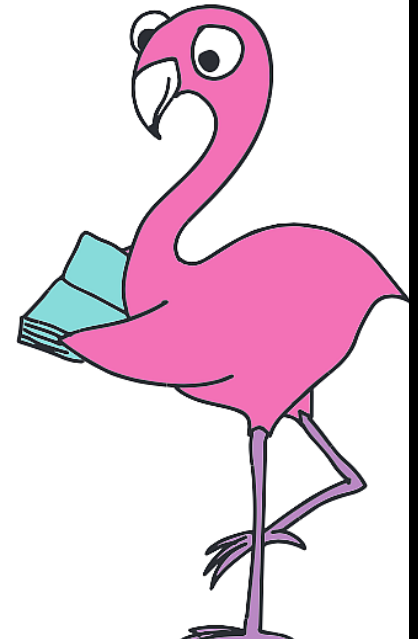
**Los Angeles  
Public Library**

**CODER**

**time**



**LOS ANGELES  
PUBLIC LIBRARY**



**Los Angeles  
PublicLibrary**



**PARTNER: LA's BEST**

**CONTENT + MATERIALS**

**FACILITATOR TRAINING**

**CENTRAL CODER TIME CLUB**

**SITE VISITS + DOCUMENTATION**

**CULMINATION EVENT**



# CODING TOOLS

Free platforms for coding





**OFFLINE**

**FREE!**

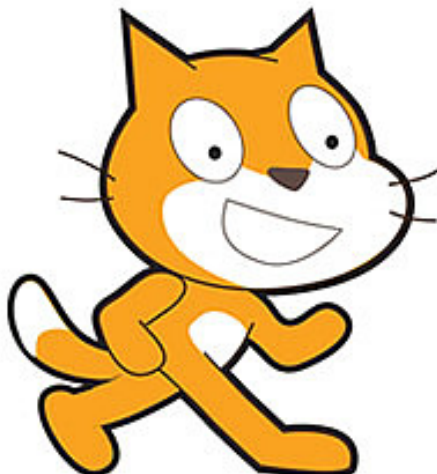


**ONLINE**

**AGES**

**8+**

**SCRATCH**



**TEACHING  
GUIDES**



**LEARNING  
GUIDES**



**VISUAL BLOCKS**  
CREATE GAMES, ANIMATIONS, ART &  
STORIES  
SEQUENCING, REPETITION  
CONDITIONAL LOGIC

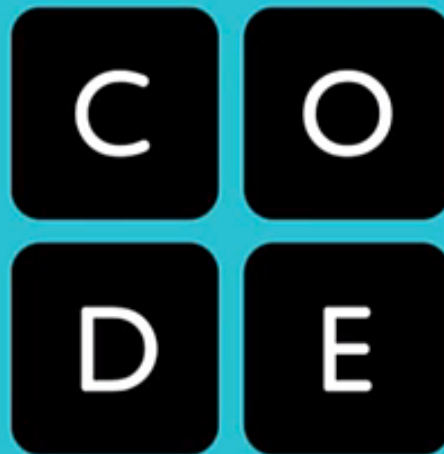
**BEGINNER**

**TUTORIALS**  
CODING COMMUNITY  
REMIX OTHER PEOPLES CODE  
AMPLE RESOURCES  
MULTIMEDIA TOOLS  
LOW FLOOR, HIGH CEILING

**FREE!**

**ONLINE**

**AGES  
5+**



@codeorg

#hourofcode

**TEACHING  
GUIDES**



**LEARNING  
GUIDES**



**VISUAL BLOCKS  
SEQUENCING, REPETITION  
CONDITIONAL LOGIC  
FUNCTIONS**

**BEGINNER**

**SELF-GUIDED INSTRUCTIONS  
SIMPLE AND FUN TO PLAY  
TARGETS YOUNGER CHILDREN  
EASY TO START  
PROMOTION MATERIALS AVAILABLE  
SHOWS JAVASCRIPT**

**FREE!**

**ONLINE**



**AGES**

**8+**

Made  Code

Code the world you want to see.

**TEACHING  
GUIDES**



**VISUAL BLOCKS  
SEQUENCING, REPETITION,  
PATTERNS**

**BEGINNER**

**INSPIRATIONAL VIDEOS  
FUN, EASY ACTIVITIES  
RESOURCES**



**touch**develop

**FREE!**

**ONLINE**

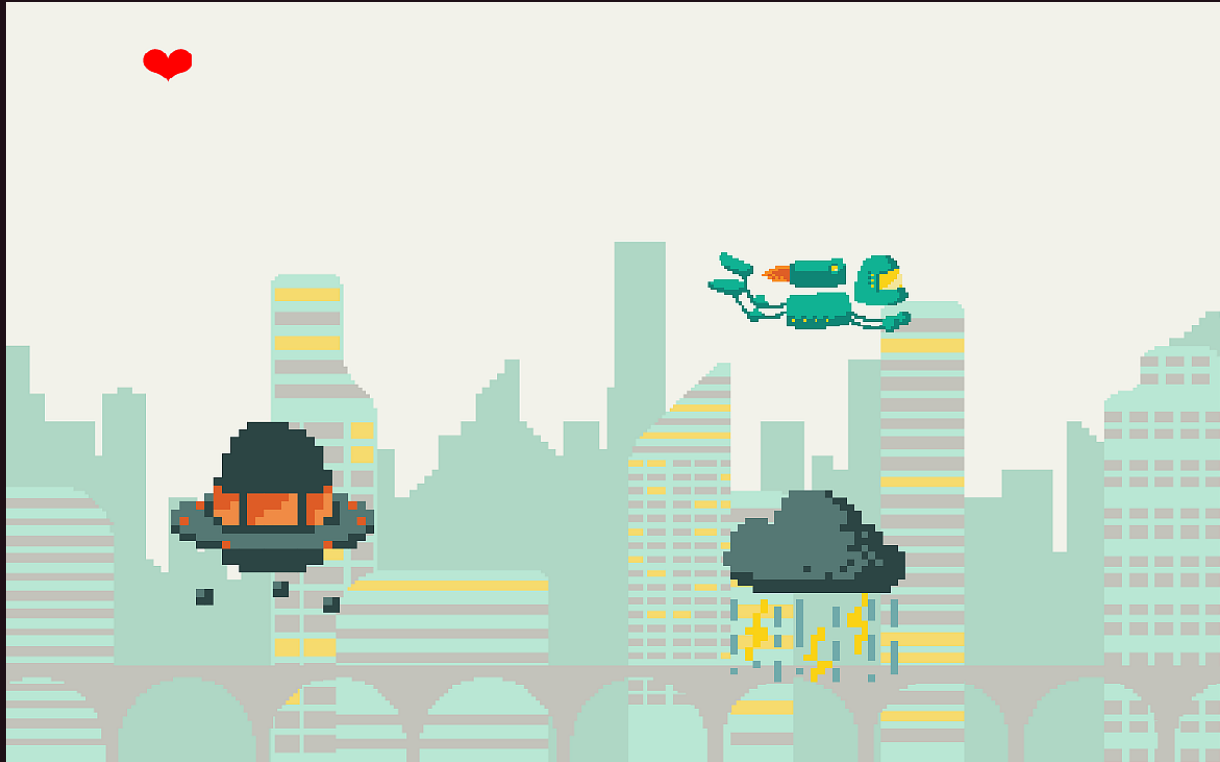


**AGES  
10+**

**LEARNING  
GUIDES**



**TEACHING  
GUIDES**



**VISUAL BLOCKS  
APP SHARING  
CREATE GAMES AND ART**

**BEGINNER**

**SHOWS CODE  
STEP-BY-STEP INSTRUCTIONS  
CREATES APPS!**



# App Inventor

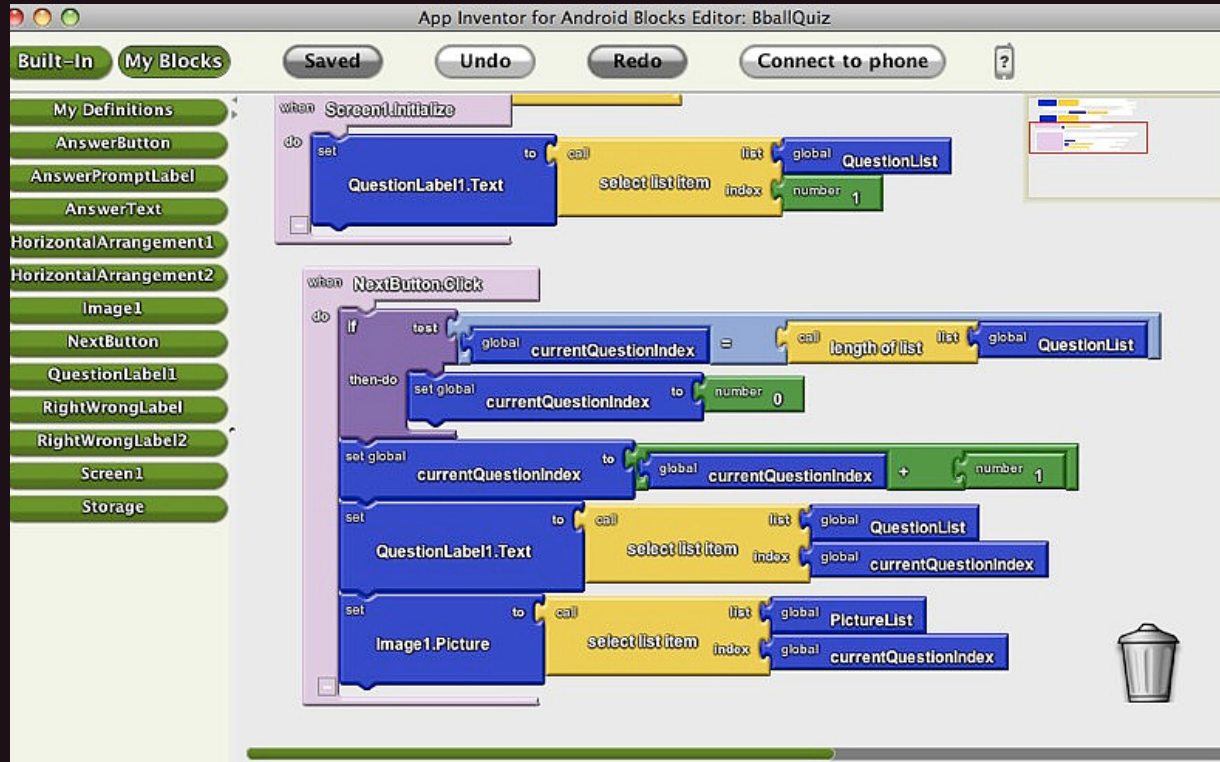
# FREE!

# ONLINE

# AGES

# 8+

# LEARNING GUIDES



# TEACHING GUIDES



# VISUAL BLOCKS CREATE AND SHARE MOBILE APPS

# INTERMEDIATE

# CREATE APPS FOR ANDROID PHONES STEP BY STEP GUIDES STRONG DISCUSSION FORUM SUPPORT

# Codecademy



## FREE!

## ONLINE



## AGES 12+

### LEARNING GUIDES



# C

### TEACHING GUIDES



HTML & CSS, JAVASCRIPT  
PYTHON, JQUERY, RUBY  
PHP, WEB DEVELOPING

## BEGINNER TO ADVANCED

PROGRAM LANGUAGES  
COMPREHENSIVE LESSONS  
SELF-GUIDED INSTRUCTIONS  
EST. TIME FOR LESSONS  
SYSTEM COMPATIBILITY



# ONLINE + APP

## FREE + PREMIUM



## GRADES K-5

## LEARNING GUIDES



## TEACHING GUIDES



## SEQUENCING, REPETITION CONDITIONAL LOGIC PROBLEM DECOMPOSITION PATTERN RECOGNITION

## BEGINNER

## BEGINNERS AND K-4 FUN, INTERACTIVE PUZZLES PROGRESSIVE LEARNING APPROACH ONSITE TUTORIALS AND TIPS CREATE DIGITAL STORIES

# MOBILE APP

FREE +  
PREMIUM

AGES  
5+

LEARNING  
GUIDES



SEQUENCING, REPETITION  
CONDITIONAL LOGIC

## BEGINNER

SIMPLE AND FUN TO PLAY  
TARGETED YOUNGER CHILDREN  
COMMON CORE ALIGNMENT  
AVAILABLE ON MULTIPLE DEVICES AND  
APP

TEACHING  
GUIDES





# OFFLINE EDITOR

FREE +  
PREMIUM



AGES  
12+

LEARNING  
GUIDES



TEACHING  
GUIDES



  
stencyl

CREATE GAMES, ANIMATIONS,  
ART & STORIES AND SOLVE  
PUZZLES

INTERMEDIATE  
+ ADVANCED

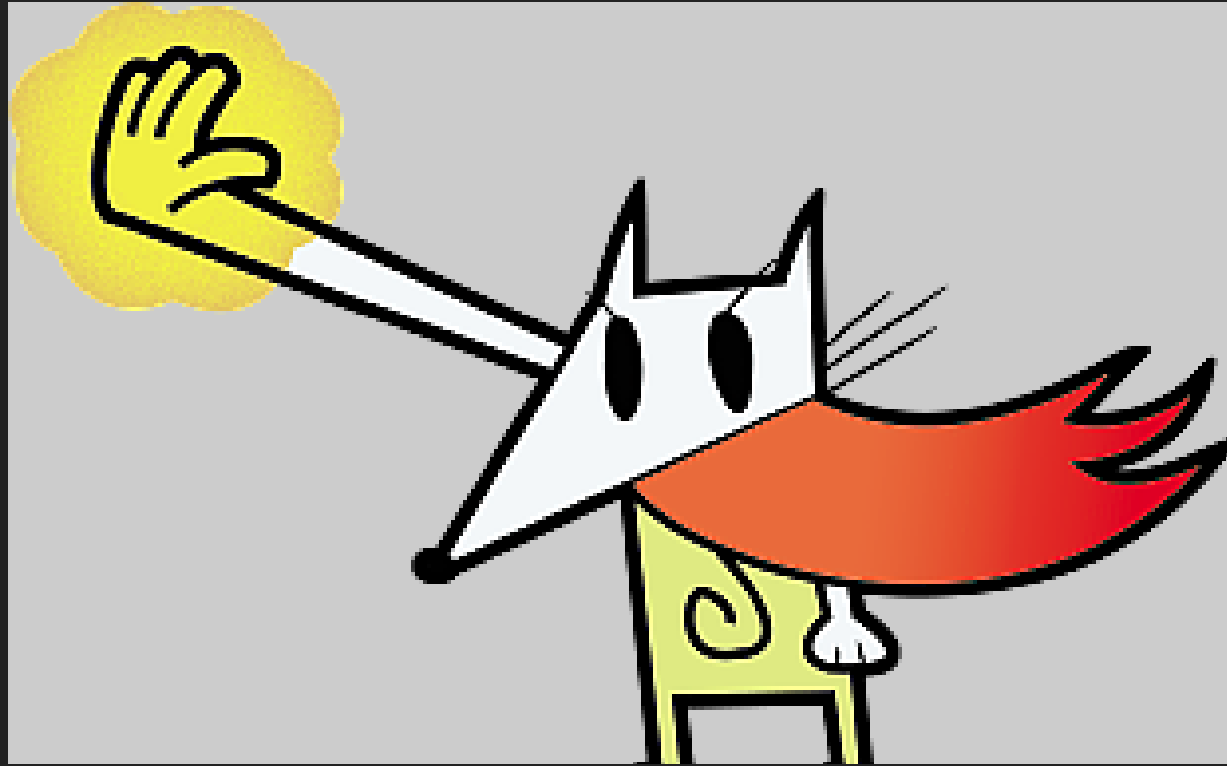
CREATE GAMES WITHOUT CODES  
PUBLISH GAMES IN DIFFERENT PLATFORMS  
BUILD-IN CURRICULUM ON TO DEPLOY  
SOFTWARE IN LESSON PLANNING  
HELPFUL DISCUSSION FORUM

# OFFLINE EDITOR

## FREE!



## AGES 12+



## BASICS OF PROGRAMMING

## INTERMEDIATE + ADVANCED

CREATE FUN GAMES  
FOR INTERMEDIATE TO ADVANCED USERS  
OFFER MANY FLEXIBILITIES TO CREATE  
THINGS

# ONLINE

# FREE!

# CRUNCHZILLA

## GRADES K-5



How about you try it? Can you replace both the 90 numbers used for the (left, top) of the second box with a variable? Hint: Either create a new variable or change offset and then use offset.

```
1 var offset = 30;  
2 var size = 80;  
3 c.fillStyle = "lime";  
4 c.fillRect(offset, offset, size, size);  
5  
6 c.fillRect(90, 90, size, size);  
7
```



## TEACHING GUIDES



## LEARNING GUIDES








## CONCEPTS LIKE VARIABLES, LOOPS, CONDITIONALS, EXPRESSIONS, AND FUNCTIONS

## INTERMEDIATE

## SIMPLE AND FUN TO LEARN GAMES BY AGE LEVEL LEARNING GUIDE LEARN SIMPLE JAVASCRIPT









# WHY THESE PLATFORMS?

-  Simple to setup and run
-  Ready to use curriculum and lessons
-  Kids learn independently
-  Minimal cost to libraries
-  Specialized staffing not required



# WHY VISUAL BLOCKS?

-  Easy to use and fun to learn
-  Interactive: select character + backdrop
-  Guided learning: built-in tutorials
-  Engaging: Puzzles
-  Immersive learning: play, learn and share
-  Transition to mainstream coding languages



# EDUCATIONAL VALUE

## PROGRAMMING CONCEPTS



Repetition



Conditional logic



Computer drawing



Handling keyboard input



Creating apps

## COMPUTATIONAL THINKING



Problem decomposition



Pattern recognition



Abstraction



Algorithmic thinking



Automation

# TIPS

FOR RUNNING CODE WORKSHOPS



**INSPIRE**

show what can be done with code

**PROMOTE**

Get the word out to your constituents

**BUY-IN**

get the support you need

**INJECT**

insert fun, creative activities or demos

**PARTICIPATE**

insert group interactivity

**INTERACT**

make is it interactive, sociable and fun

**INVOLVE**

get parents and adult involved

**CHALLENGE**

create challenges and competition





# TAKE ACTION

## PARTNER UP!



Girls Who Code



Black Girls Code



Code-to-Learn Foundation



Math And Coding



Local tech companies  
and schools



Be excited



Create sharable and  
scalable library-created  
content



Take advantage of workshop  
guides

## DIY

## DO IT YOURSELF



# RESOURCES FOR LIBRARIANS



Bitesize (from BBC Learning)



Barefoot Computing



Resources for Coding (Tech-Girls)



MathAndCoding



Code.org



CodeAcademy



createwithcomputers.com



Code | Código : A guide for parents



Coderzine

# **SUSTAINABILITY**

**BEYOND THE HR OF  
CODE**



# PARTNER



with local schools, organizations &  
tech companies



# PROMOTE



ideas to parents, teachers and  
administrators



# VOLUNTEER



get volunteers to teach  
the class



# APPLY



for government grants  
and funding



# TODAY'S RESOURCES



RNC V Presentation website:  
[libcode.weebly.com](http://libcode.weebly.com)



[createwithcomputers.com](http://createwithcomputers.com)



Coding platform SPECS



Código: Una guía para padres |  
Code: A guide for parents



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www.diygirls.org

