

Best of both worlds:

Issues of structure and agency in
computational creation, in and out of school

Karen Brennan

Thesis Proposal Critique

Tuesday, April 10, 2012

Background

Research Questions

Methodological Approach

Preliminary Interpretations

Progress

Contributions



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About

BORN THIS WAY THE ALBUM
AVAILABLE NOW!
<http://bit.ly/mFqY5L>

47,007,637

like this

483,108

talking about this

Likes

See All



MINDLESS
BEHAVIOR



Polaroid

Lady Gaga

Like

Musician/Band

Create a Page



Wall

Lady Gaga · Everyone (Top Posts)

Share: Post Photo Video

Write something...



Lady Gaga

Worked all day long. Planning shoots, rehearsals and art projects. Gonna read some OSHO and sleep until the rebel recharges her bullets.

Like · Comment · Tuesday at 10:30pm ·

Gus Shane Evans, Emre Germanotta, Βαρβάρα Ελευθεριάδου and 41,960 others like this.

View all 4,719 comments

311 shares



Lady Gaga

Today's the final day to submit your drawings of Gaga for V Magazine's latest Drawn This Way competition! Tweet your images of Gaga wearing pearls or flipping the bird at the ball game to @LadyGaga and @VMagazine to enter your work.



DRAWN THIS WAY

TWEET IMAGES OF YOUR GAGA ILLUSTRATIONS
@VMAGAZINE AND @LADYGAGA FOR A
CHANCE TO SEE YOUR WORK IN THE PAGES OF V!
THE CONTEST ENDS TONIGHT, SO YOU BETTER
GET DRAWN THIS WAY NOW!

Like · Comment · January 23 at 12:14pm ·

Want to like or comment on this page?

To interact with Lady Gaga you need to sign up for Facebook first.

Sign Up

It's free and anyone can join. Already a member? [Log in.](#)

Similar Facebook Pages



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49,899,129 like this



Katy Perry

38,311,420 like this



Eminem

51,630,164 like this

More ▾



Everyday life is increasingly regulated by complex technologies that most people neither understand nor believe they can do much to influence.

Bandura, 2001

code

We cannot afford to ignore code or allow it to remain the exclusive concern of computer programmers and engineers.

Hayles, 2005

Programming is the sweet spot, the high leverage point in a digital society.

If we don't learn to program, we risk being programmed ourselves.

Rushkoff, 2010

The 4th R ...

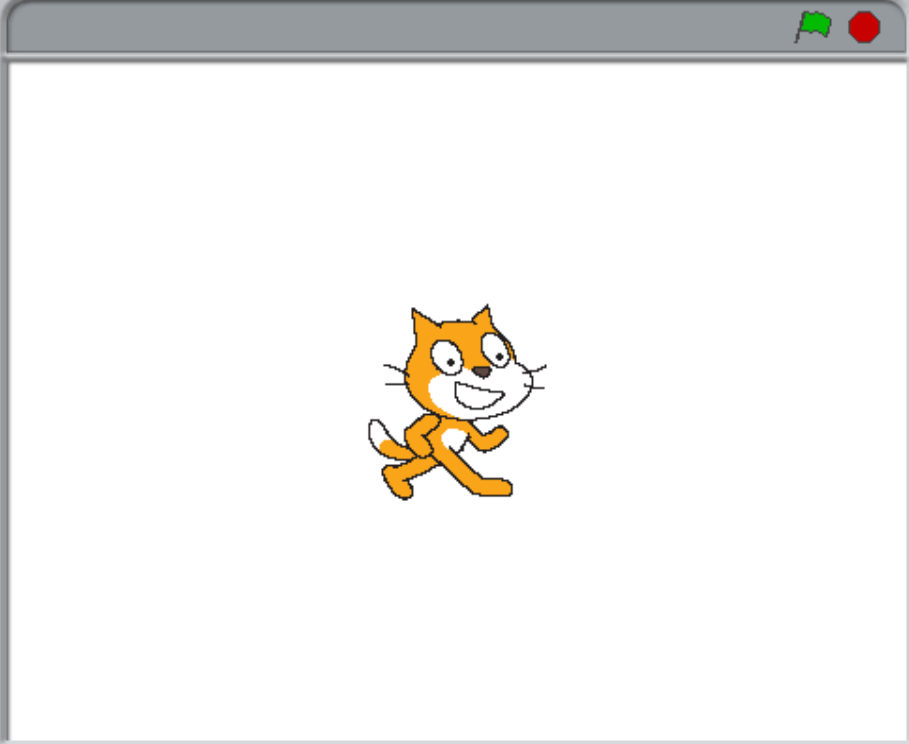
provides an alternative to fact-based mastery
and proposes, instead, iterative, process-oriented,
constructive, innovative thinking.

How can we support young people's participation as computational creators?



- Motion
- Control
- Looks
- Sensing
- Sound
- Operators
- Pen
- Variables


Sprite1 
 x: 0 y: 0 direction: 90
 Scripts | Costumes | Sounds



New sprite:    x: -193 y: 77

 **Sprite1**
 Stage

move 10 steps
 turn 15 degrees
 turn 15 degrees
 point in direction 90
 point towards
 go to x: 0 y: 0
 go to
 glide 1 secs to x: 0 y: 0
 change x by 10
 set x to 0
 change y by 10
 set y to 0
 if on edge, bounce
 x position
 y position
 direction

Tools do not specify how they should be used.

designing
personalizing
sharing
reflecting

agency

agency

selfhood	choice
motivation	initiative
will	freedom
intentionality	creativity

agency

able to define and pursue learning goals,
“to play a part in their self-development,
adaptation, and self-renewal”

Bandura, 2001; Martin, 2004

agency

agency vs.

agency vs. structure

Structure is not to be equated with constraint
but is always both constraining and enabling.

Giddens, 1984

[Home](#) | [Subject Search](#) | [Help](#) | [Symbols Help](#) | [Pre-Reg Help](#) | [Final Exam Schedule](#)

Media Arts and Sciences Spring 2012

[MAS Home](#) [Evaluations \(Certificates Required\)](#)

◆ | [MAS.-MAS.999 plus UROP](#) | ◆

Undergraduate Subjects

MAS.110 Fundamentals of Computational Media Design

U (U) A CI-H (E)

Prereq: None

Units: 3-3-6

History of modern art and design from the perspective of the technologist. Exploration of visual analysis, typography, and technologies for audio/visual expression. Enrollment limited; preference to students in Media Arts and Sciences freshman program.

V. M. Bove, Jr.

MAS.111 Introduction to Doing Research in Media Arts & Sciences

U (U)

Prereq: None

Units: 1-4-1 [P/D/F]

Lecture: F3-5 (E14-525)

Intended for students pursuing research projects at the Media Laboratory. Topics include Media Lab research areas; documenting research progress; ethical issues in research; patents, copyrights, intellectual property; and giving oral, written, and online presentations of results. A final oral presentation is required. Enrollment limited with preference given to students in the Media Arts and Sciences freshman program.

V. M. Bove, Jr.

No required or recommended textbooks

MAS.131 Computational Camera and Photography

U (U)

(Subject meets with [MAS.531](#))

Prereq: Permission of instructor

Units: 3-0-9

Covers the complete pipeline of computational cameras that attempt to digitally capture the essence of visual information by exploiting the synergistic combination of task-specific optics, illumination, sensors, and processing. Students discuss and use thermal, multi-spectral, high-speed and 3-D range-sensing cameras, as well as camera arrays. Presents opportunities in scientific and medical imaging, and mobile phone-based photography. Also covers cameras for human computer interaction (HCI) and sensors that mimic animal eyes. Intended for students with interest in algorithmic and technical aspects of imaging and photography. Students taking graduate version complete additional assignments.

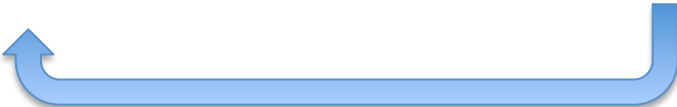
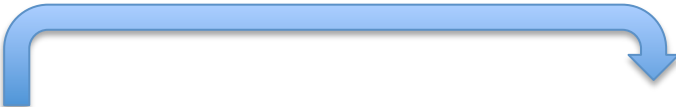
agency vs. structure

agency

structure

agency

structure



How can learning environments
be designed to support computational creators
in the activities of
designing, personalizing, sharing, and reflecting?

How can learning environments
be designed to support computational creators
in the activities of
designing, personalizing, sharing, and reflecting?

Within these learning environments,
how can structure be employed to enable,
rather than constrain,
the agency of computational creators?

Two settings:

Two settings:

Scratch online community

Two settings:

Scratch online community

designing
personalizing
sharing
reflecting

Two settings:

Scratch online community

designing
personalizing
sharing
reflecting

K-12 classrooms

Two settings:

Scratch online community

designing
personalizing
sharing
reflecting

K-12 classrooms

designing
personalizing
sharing
reflecting

Setting #1:

Kids in the Scratch online community

Motion

Control

Looks

Sensing

Sound

Operators

Pen

Variables



Sprite1



x: 0 y: 0 direction: 90

Scripts

Costumes

Sounds

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: 0 y: 0

go to

glide 1 secs to x: 0 y: 0

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

x position

y position

direction



x: 256 y: -354

New sprite: [star] [star] [star]



Stage



imagine • program • share

Login or Signup for an account

search

Create and share your own interactive stories, games, music, and art

Check out the 2,443,090 projects from around the world!



To create your own projects:

Download Scratch

```
when I receive boom
set whirl effect to 0
change x by picture from 10 to 30
change whirl effect by 90
wait 0.2 secs
set whirl effect to 0
```

Featured Projects

See more



Bingo by ffred



Marine Animals by Grassfur



Outrageous Rand... by MikeKucinski

Collab Camp

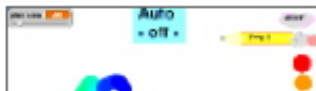


Check out all the music mashups created by Scratchers in Collab Camp.

Learn more

Projects Selected by Gamefan888

Learn more



Scratch Day



Be a part of Scratch Day - a worldwide network of gatherings, where Scratchers come together to meet, share, and learn.

[Login](#) or [Signup](#) for an account

Foster-A-Nyan Cat



[VanillaCreme](#) shared it 4 months, 1 week ago

Some rights reserved

Based on [VanillaCreme...](#)'s project

2007 views, [18 taggers](#), 194 people love it, [9 remixes](#) by 8 people, 250 downloads, in [17 galleries](#)

Download this project!



Download the 32 sprites and 148 scripts of "[Foster-A-Nyan Cat](#)" and open it in [Scratch](#)

Project Notes

I Belive this is a breakthrough for nyan cats and nyan lovers. so put your hand in and LOVE IT! :D
READ NOTES----->

Welcome to Foster-A-Nyan Cat!
Press the buttons next to items to keep your nyan cat happy and healthy!
Make sure none of the meters get to 30.if you keep it healthy, when it turns 5 you can release it in the wild!

FEATURED! 12/7/2011

HD123 said:"Wow! Neat project!! I like my little nyan cat. :D"

koolguy37 said:"so cute and cuddly! Did i mention the cuteness? i loved it both on the

SCRATCH

File Edit Share Help



- Motion
- Looks
- Sound
- Pen
- Control
- Sensing
- Operators
- Variables

Sprite10
x: -46 y: -121 direction: 90

Scripts Costumes Sounds

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: -46 y: -121

go to

glide 1 secs to x: -46 y: -121

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

x position

y position

direction

when green flag clicked

show

set Age to 0

set Boredness to 0

set Hunger to 0

set Sleepyness to 0

set Change Time to 0

switch to costume costume4

point in direction 90

go to x: -46 y: -121

set size to 112 %

when green flag clicked

forever

wait 6 secs

change Boredness

change Hunger

change Sleepyness

change Change Time

when green flag clicked

forever if Boredness = 30

broadcast gameover

when green flag clicked

forever if Sleepyness = 30

broadcast gameover

when I click

glide 2

repeat

Foster-A-Nyan Cat

Sleepyness 0

Hunger 0

Boredness 0

Change Time 0

Age 0

Your Nyan Cat is: a baby Girl

x: 166 y: -45

New sprite:

Sprite1 Sprite2 Sprite3 Sprite4 Sprite5 Sprite6 Sprite7

Sprite8 Sprite9 Sprite10 Sprite11 Sprite12 Sprite13

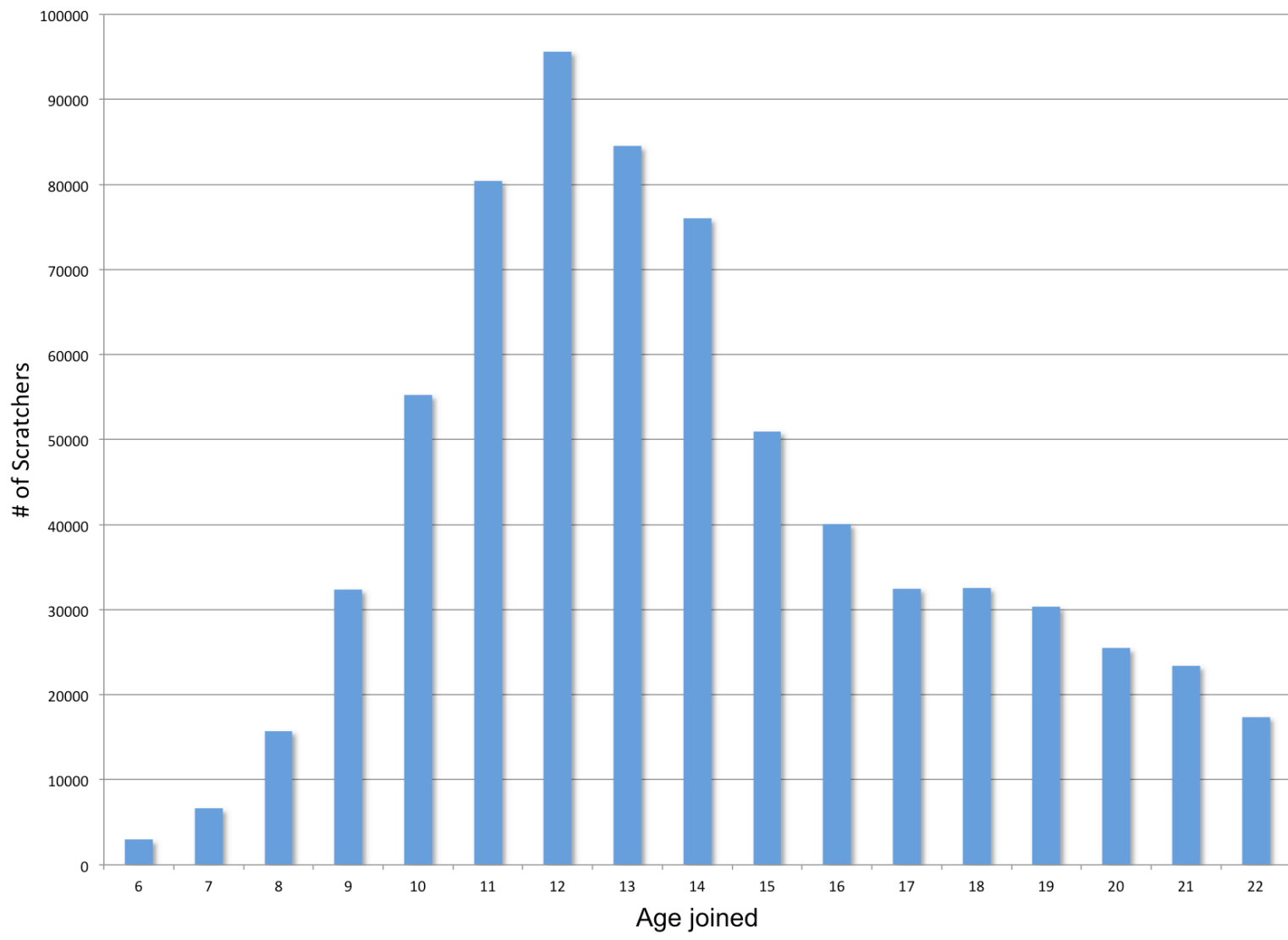
Stage

Sprite1... Sprite2... Sprite1... Sprite1... Sprite1... Sprite1... Sprite2...

Sprite2... Sprite2... Sprite2... Sprite2... Sprite2... Sprite2... Sprite3...

1,068,950

registered members





designing
personalizing
sharing
reflecting

Methodological Approach

observation

field notes from five years of observing
Scratch online community interactions

interviews

with 35 Scratch online community members

Background

Introduction to Scratch

Current practices

Project creation

Project framing

Project process

Online community

Other people

Other projects

Looking forward

Scratch

Technology

Beyond technology

designing

personalizing

sharing

reflecting

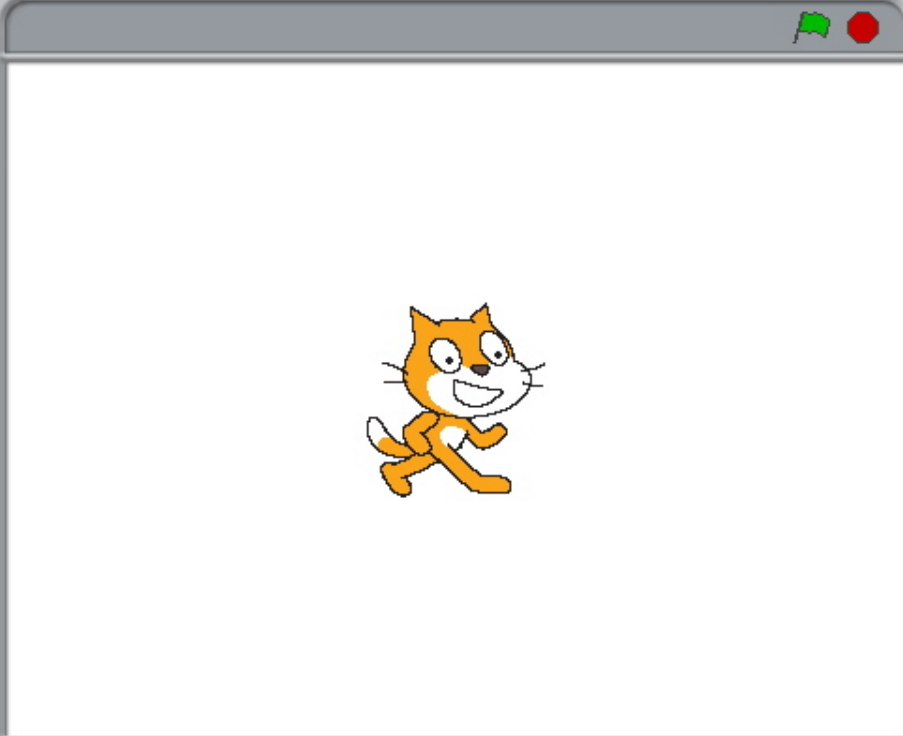
2,446,301

projects uploaded

- Motion
- Control
- Looks
- Sensing
- Sound
- Operators
- Pen
- Variables

Sprite1
x: 0 y: 0 direction: 90

- Scripts
- Costumes
- Sounds



- move 10 steps
- turn 15 degrees
- turn 15 degrees
- point in direction 90
- point towards
- go to x: 0 y: 0
- go to
- glide 1 secs to x: 0 y: 0
- change x by 10
- set x to 0
- change y by 10
- set y to 0
- if on edge, bounce
- x position
- y position
- direction

New sprite: [Add] [Library] [Question]



Stage

- Motion
- Looks
- Sound
- Pen
- Control
- Sensing
- Operators
- Variables

JetPack_Girl
 x: -177 y: -115 direction: 180

- Scripts
- Costumes
- Sounds

Scratch block palette containing categories like Motion, Looks, Sound, Pen, Control, Sensing, Operators, and Variables.

```

when I receive go
  set size to 75 %
  switch to costume Right
  show

when I receive yay!bonus?
  go to x: -164 y: -116

when I receive go
  forever
    if key right arrow pressed?
      set x speed to x speed + 0.5
      set direction to 0

when I receive bonus...
  reset timer
  forever
    if timer > 30.0
      broadcast lose :(

when I receive go
  set size to 75 %
  
```

10 levels

10 Levels



timer 67.2

x: 115 y: 30

New sprite: [Icons for new sprite selection]

Sprite selection area showing various assets like JetPack_Girl, keys, and other game elements.

identify (the source of) the problem

identify (the source of) the problem

read through your scripts

experiment with scripts

try writing scripts again

find example scripts that work

identify (the source of) the problem

read through your scripts

experiment with scripts

try writing scripts again

find example scripts that work

tell/ask someone else about the problem

identify (the source of) the problem

read through your scripts

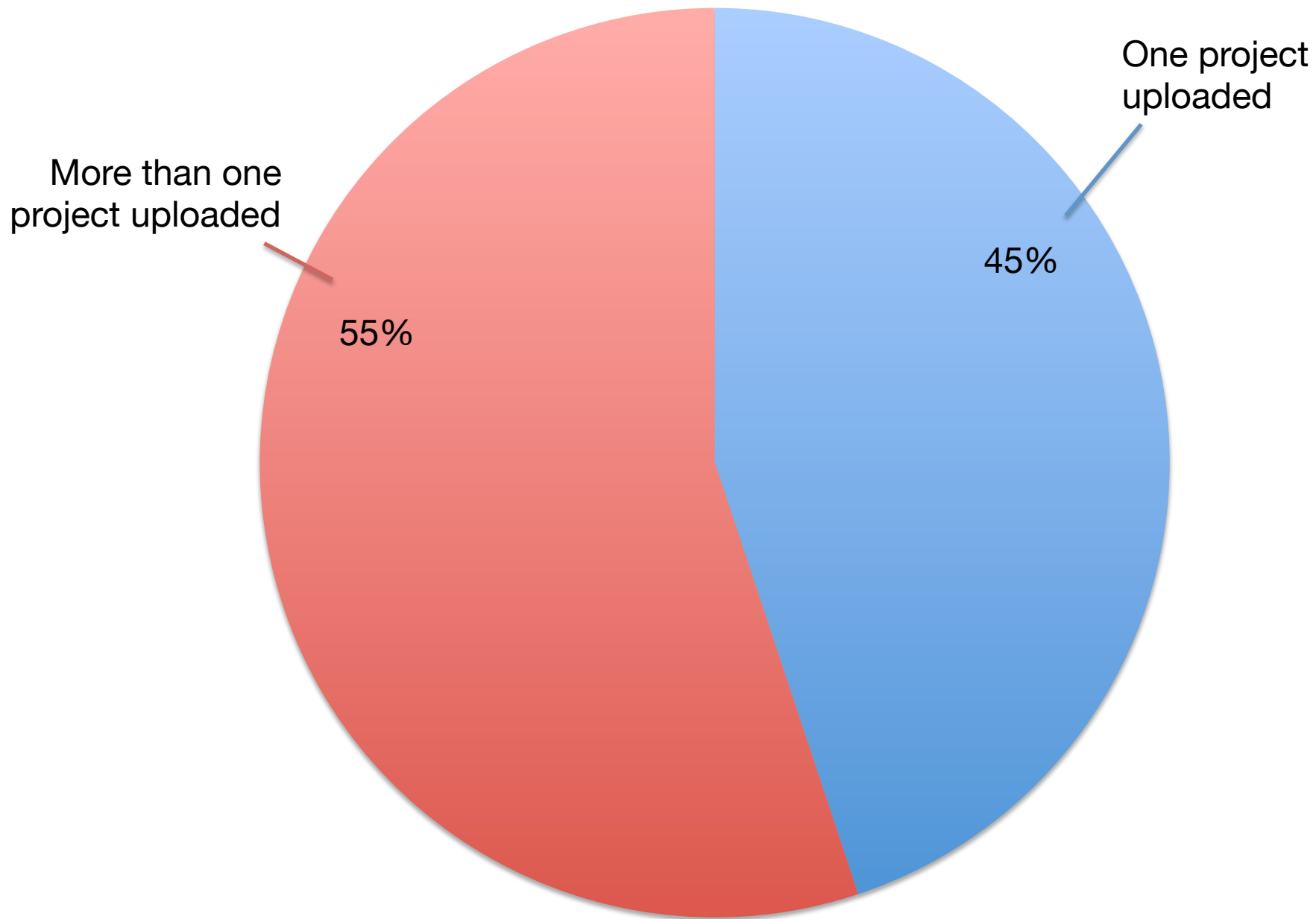
experiment with scripts

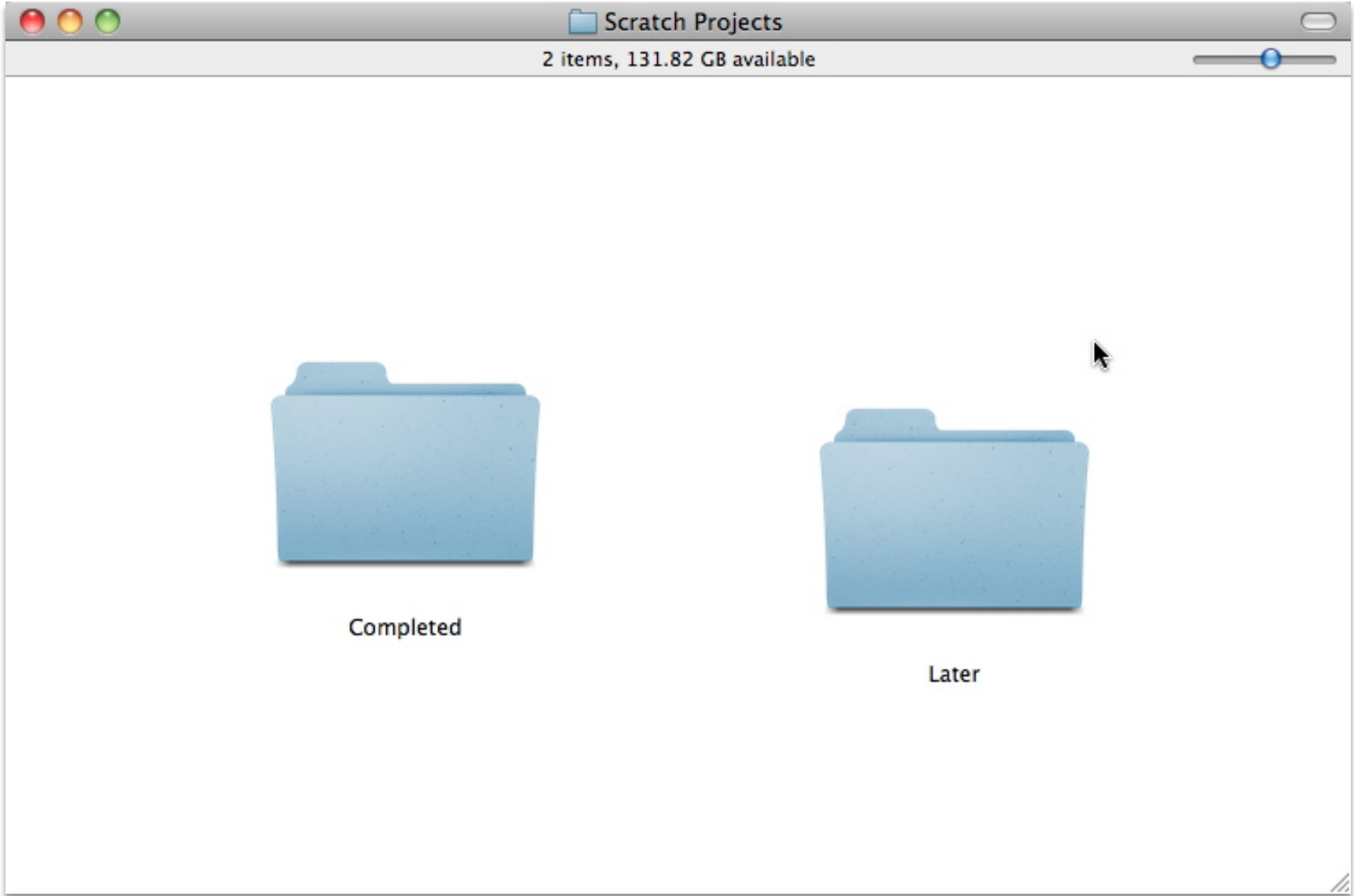
try writing scripts again

find example scripts that work

tell/ask someone else about the problem

take a break





Scratch Projects

2 items, 131.82 GB available



Completed



Later

What are all of the projects in the 'Later' folder?

Projects I abandoned because, you know, I didn't know what to do.

But what if you really like your project idea?

It's just sort of sad that way.

Interview with Connor
12-year-old Scratcher

designing

personalizing

sharing

reflecting



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If you had to explain what Scratch is to one of your friends, how would you describe it?

It's a really good computer program built by MIT, which is a big university down in Michigan. I think. Right?

It's in Massachusetts, but close.

Ah, close. And it's really great to express yourself creatively. You could do anything with it. You can make video games, music, art, videos, anything. The possibilities are endless, no limitations, really.

Interview with Amy
12-year-old Scratcher

**Hello I am Maya
the bee and you
can guide me
through my
adventures. First
go right**





Weight

Age

Health

Gender:

Hunger

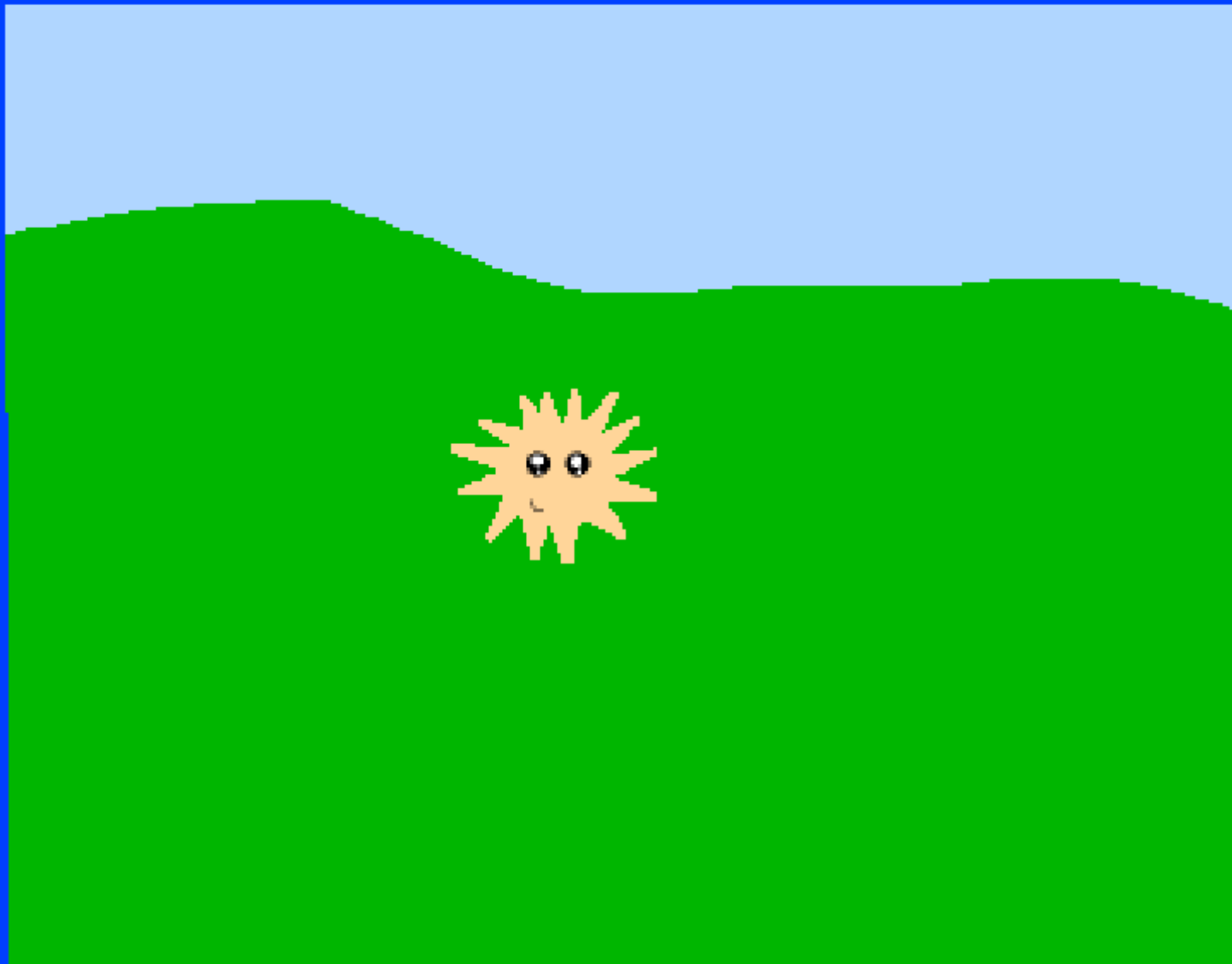
Thirst

Sleepiness

Cleanliness

Happiness

Talk



0

Level 1

0

EXTREME CLIMBING

START



Click Love it?

DOWNLOAD

x (empty) length: 0
y (empty) length: 0

20
Enter

Enter Point Delete Point Clear All

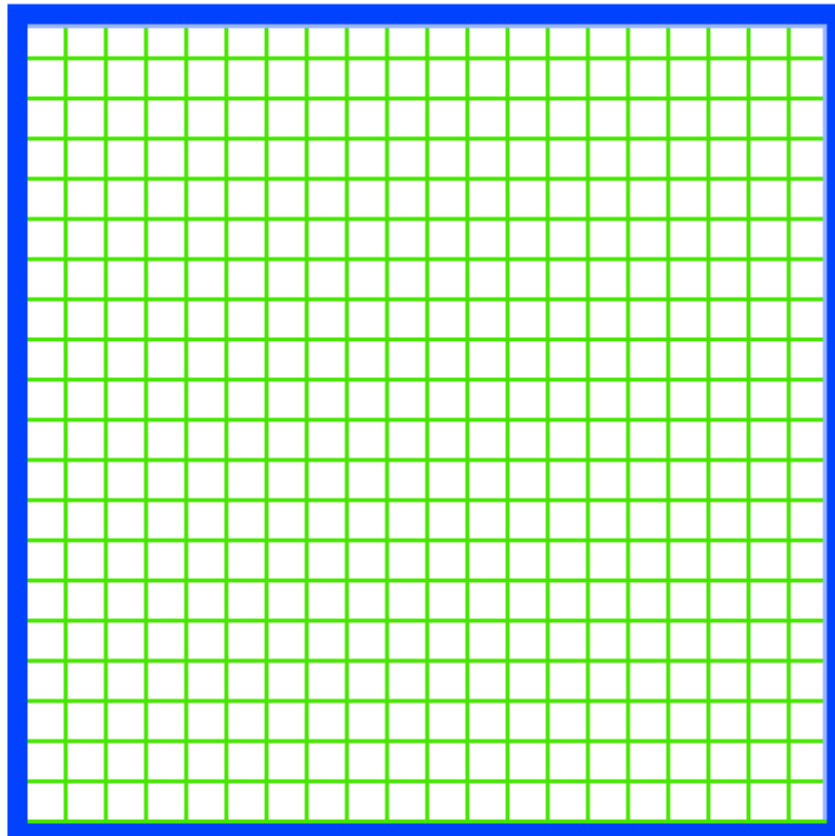
Connect Points

Find Linear Eq Find Exponential Eq Find Power Eq

Find Best Eq Graph Eq **equation type**

equation

Correlation Coefficient **r=**

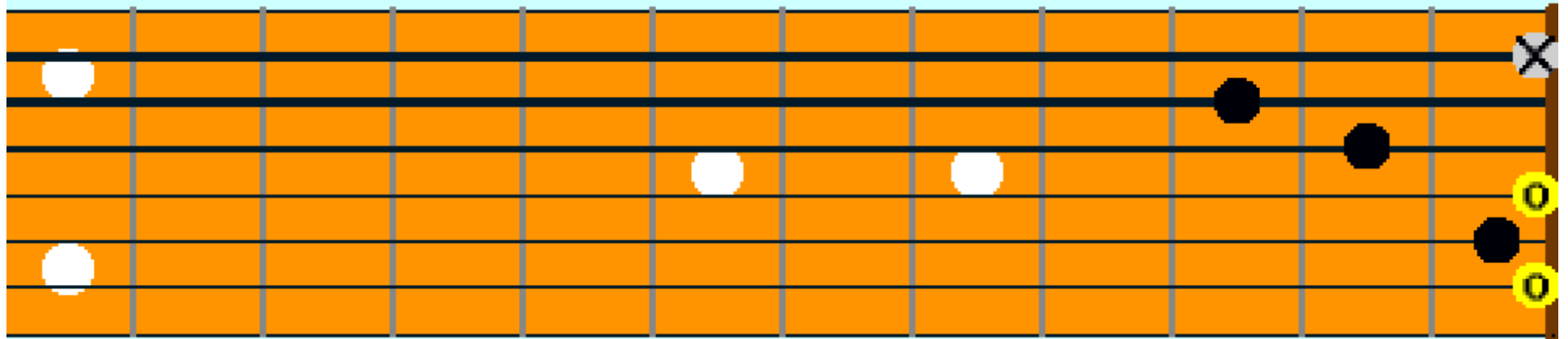


20

Enter

A A#/Bb B C C#/Db D D#/Eb
E F F#/Gb G G#/Ab

C major



Major

Minor

SavedChords
(empty)
+ length: 0

Save Chord

Load Chord

Clear



imagine • program • share

Login or Signup for an account

search

Create and share your own interactive stories, games, music, and art

Check out the 2,443,090 projects from around the world!



To create your own projects:

Download Scratch

```
when I receive boom
set whirl effect to 0
change x by picture from 10 to 30
change whirl effect by 90
wait 0.2 secs
set whirl effect to 0
```

Featured Projects

See more



Bingo by ffred



Marine Animals by Grassfur



Outrageous Rand... by MikeKucinski

Collab Camp

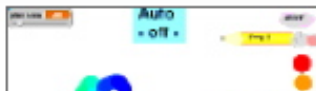


Check out all the music mashups created by Scratchers in Collab Camp.

Learn more

Projects Selected by Gamefan888

Learn more



Scratch Day



Be a part of Scratch Day - a worldwide network of gatherings, where Scratchers come together to meet, share, and learn.

This project has been Censored by Admin

NO MORE!!



v23



~~NO MORE~~
CATS,
~~WARRIORS,~~
~~OR ART~~
~~CONTEST!!!~~



large collection of projects
community of creators
open-ended design



large collection of projects
community of creators
open-ended design



lack of explicit guidance
not connecting w/interests

lack of explicit guidance
not connecting w/interests



large collection of projects
community of creators
open-ended design

finding external support
resisting designer structure

Setting #2:

Kids in the classroom

**How do we make computational creation
accessible to more young people?**

Telling stories

Requesting/offering resources

Asking/answering questions

Making connections

Stories

Resources

Discussions

Members

Events

What is Scratch?

Scratch is a programming language that makes it easy to create interactive art, stories, simulations, and games – and share those creations online.

[Learn more »](#)

What is ScratchEd?

ScratchEd is an online community where Scratch educators:



share stories



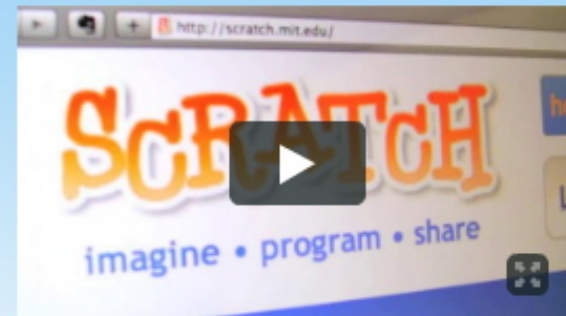
exchange resources



ask questions



find people



Get Started with Scratch

Imagine the creative possibilities with Scratch and the online community in this intro video.

New Stories



Pilot Perspectives: Reflections on the Scratch Curriculum Guide by Alvin Kroon of Kamiak High School

In this special ScratchEd story series, K-12 educators who participated in the Scratch curriculum guide draft pilot program share their experiences and feedback.

ScratchEd Team posted this 1 week ago

<Code Club> & 2012 National STEM Video Game Challenge

5th and 6th graders using Scratch to create video games for the 2012 National STEM Video Game Challenge

Matt Arnold posted this 2 weeks ago



Student's View: The Benefits of Understanding Programming

New Resources



Top Scratcher : Apprendre à créer un jeu video en 5 Parties

Christophe THOMAS posted this 2 days ago



Traducción de Scratch al Guaraní

Fundación Gabriel Piedrahita Uribe posted this 6 days ago



Cómo comprimir imágenes y sonidos en Scratch

Fundación Gabriel Piedrahita Uribe posted this 6 days ago

New Discussions

Misconceptions when teaching Scratch

Naomi Golf commented on this 10 hours ago

Taking part in ScratchED community research

orad welsberg commented on this 2 days ago

Scratch@MIT Registration Now Open

Susan Ettenheim commented on this 2 days ago

WebMaking Instructor Community Conference

ScratchEd Team posted this 2 days ago

Stories

Resources

Discussions

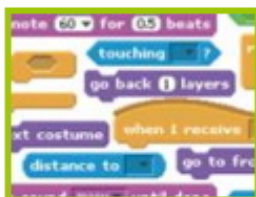
Members

Events

Resources Home

Explore Resources

Featured Resources



Scratch Curriculum Guide Draft

Contributed by [ScratchEd Team](#), November 03, 2011

A design-based introduction to computational thinking with Scratch

Content Types: Activity, Assessment, Audio and Video, Curriculum, Handout, Lesson Plan

Education Level: Preschool and Kindergarten, Elementary School, Middle School, High School, College and University, Professional Development, Other

Curricular Areas: Computer Science, Engineering, Language Arts, Mathematics, Music, Science, Social Studies, Teacher Education, Technology, Visual Arts, Other

47 Comments 65 Bookmarks

More Featured Resources

[Scratch Curriculum Guide Overview: August 2011 Webinar](#)

Contributed by: [ScratchEd Team](#)

[Helping People Get Started with Scratch](#)

Contributed by: [Karen Brennan](#)

[Designing a Scratch Workshop](#)

Contributed by: [Karen Brennan](#)

[View More »](#)



New to Scratch?

You're curious about computational creation, but not sure where to start.

[Begin here »](#)



Familiar with Scratch?

You're intrigued, but you want ideas for how to introduce people to Scratch.

[Dive in »](#)



Experienced with Scratch?

You know the fundamentals, but you're looking for fresh ideas and strategies.

[Go deeper »](#)

Search Resources

Education Level

Preschool and Kindergarten (204)

Content type

Activity (225)
Advocacy Material (41)

Curricular Area

Computer Science (298)
Engineering (206)

Language

English (298)
Español (62)

Members



All Members - Most Recently Online



Andrew Davidson

Member since: May 18, 2010

Last access: April 06, 2012

I am currently teaching computer science and digital media at Roosevelt HS in Seattle. With a background in math, computer science, engineering, and design, I have also taught interaction design at...



John Gomes

Member since: January 14, 2012

Find Others

Whether close by or far away, there are numerous Scratch educators around the world for you to connect with. Explore the map or browse the members list to find people with shared interests and experiences.

[Create an account](#)

Filter by member's interests:

Curricular Area:

- Computer Science
- Engineering
- Language Arts
- Mathematics
- Music
- Science
- Social Studies
- Teacher Education
- Technology
- Visual Arts
- Other

Education Level:

- Preschool and Kindergarten
- Elementary School
- Middle School
- High School
- College and University
- Professional Development
- Other

4,905 registered members

151 stories

407 resources

2,327 discussion posts

218,358 unique visitors

1,338,925 page views

But...





Share 6 - Karen Brennan

The image shows the Scratch 1.4 interface. The top menu bar includes 'File Edit Share Help'. The left sidebar contains categories: Motion, Looks, Sound, Pen, Control, Sensing, Operators, and Variables. The main workspace shows a script for 'Sprite3' with the following code blocks: 'when clicked', 'wait 3 secs', and 'say I agree. The beach IS awesome. for 2 secs'. The stage background is a beach scene with a yellow character and a purple character. The bottom status bar shows 'Scratch 1.4 of 30-Jun-09' and 'Wed 7:53 PM'.

Video



Attendees (26)

- Hosts (2)
 - Karen Brennan
 - Michelle Chung
- Presenters (0)
- Participants (24)
 - Carol Hachert
 - Chris Myers
 - Dinna Johnson
 - Eileen
 - Joseph Kess
 - JuanCarlosLopez 2
 - Justin Bear OLPC Canada
 - Katy
 - kevmurphy775
 - Kim
 - Leeann
 - Lindsay Allen
 - Martha Bowden
 - MaryannM
 - MC
 - Ms. I
 - Myers Learning
 - N Webb
 - Randall F
 - Sandie
 - Sergio Santostasi
 - susan

Chat (Everyone)

JuanCarlosLopez 2: 5 or 6
JuanCarlosLopez 2: initial position
Ms. I: Gobo is stuck
Michelle Chung: 13. Initializing a sprite
JuanCarlosLopez 2: double-clicking on the sprite, updates the coordinate in the command section
Randall F: can he go completely off the stage?
Sergio Santostasi: With broadcasting?
Randall F: glide to x:500?
Michelle Chung: 14. broadcast/when I receive function



0:52:49/1:21:33

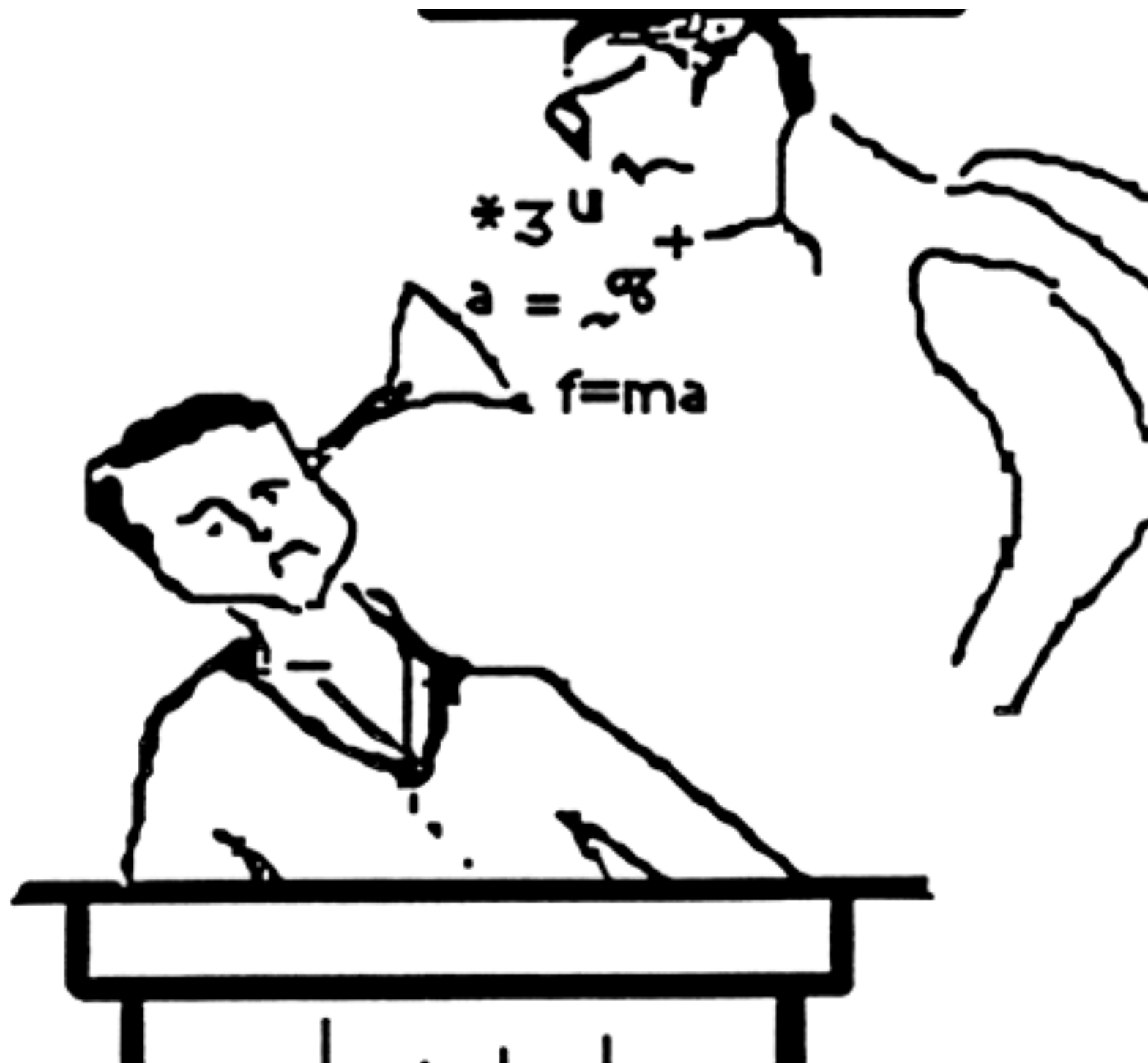




CREATIVE COMPUTING
a design-based introduction to computational thinking

DRAFT
Friday, September 23, 2011

**Won't school destroy all of
the interestingness that
we see on the website?**



structure

Homogeneity in activity
Learning as individual process

Not all structure constrains.

designing
personalizing
sharing
reflecting

Methodological Approach

action research

developing the online educator community,
organizing gatherings
(meetups, webinars, conferences),
designing resources

interviews, artifact analysis, observation
with 21 Scratch educators
in-person and online participation

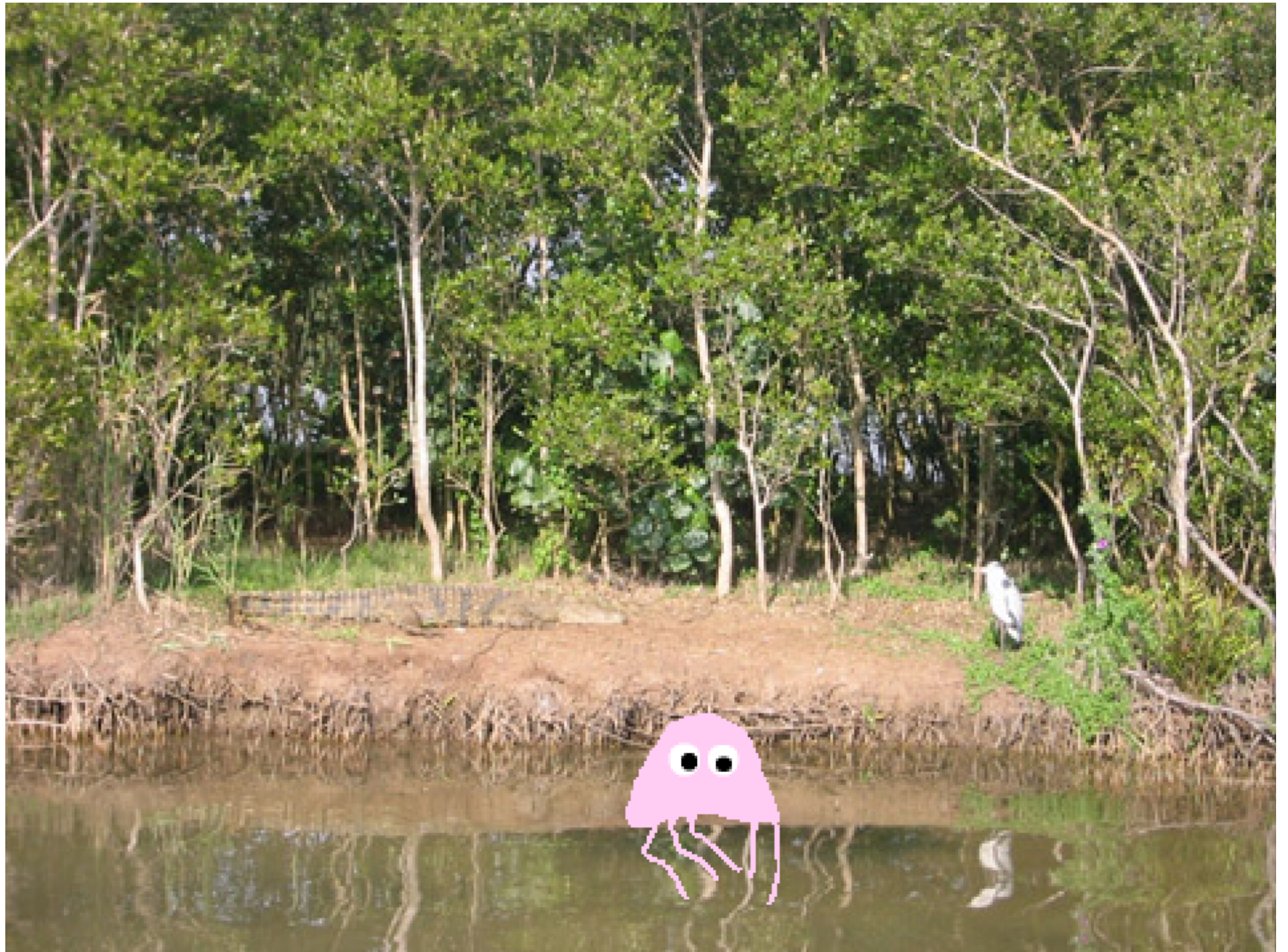
designing

personalizing

sharing

reflecting





How can a teacher deal with the open-endedness?

It would be good if the teacher feels that they can say, “Well, I don’t know.” Because there’s no way you’re going to be able to answer all their questions.

I don't know how to do some things, but I feel OK as long as I can sort of know where to get help.

Interview with Marie
Middle-school and high-school teacher

How do your students feel about the open-endedness?

A lot of the time the kids want to be told how to do things. After a while, I say, “You know, you’re the designer. You’ve got to figure out what's OK and what details you want.”

It’s often the kids who are reluctant to be creative or reluctant to make a choice. That’s because they aren’t given opportunities to make mistakes, and they’re afraid that if they do make a choice, then I’m going to correct them and say, “Oh, no, no – that’s not right.”

Interview with Marie
Middle-school and high-school teacher

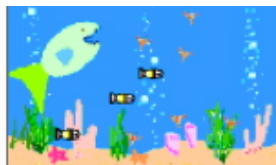
designing

personalizing

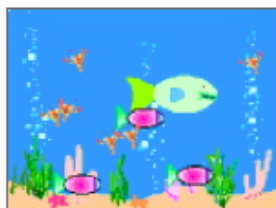
sharing

reflecting

```
;;; << Your name goes here >>
;;; Procedure for computing the volume of a sphere.
;;; Inputs:
;;;   radius is the radius of the sphere (must be a number
;;;   greater than or equal to zero to get a sensible result).
;;; Returned value:
;;;   the sphere's volume.
(define sphere-volume
  (lambda (radius)
    (*
      (/ 4.0 3.0)
      (* 3.1415926
        (* radius (* radius radius)))))))
```



By: [shenkejing2012](#)
[Check out this project!](#)



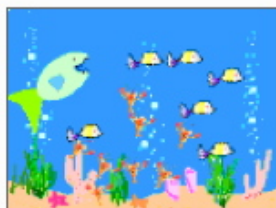
大鱼吃小鱼 (徐彰)

By: [xuzhang2012](#)
[Check out this project!](#)



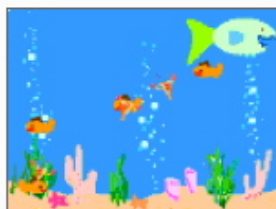
fkdsf

By: [lz20063](#)
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大鱼吃小鱼 (丁珂)

By: [dingke2012](#)
[Check out this project!](#)



大鱼吃小鱼 (何雨轩)

By: [heyuxuan2012](#)
[Check out this project!](#)
Description: ..



故事 (吴子翼)

By: [wuziyi2000852...](#)
[Check out this project!](#)
Description: 卡是发可发可就年个可就没



Motion

Control

Looks

Sensing

Sound

Operators

Pen

Variables



Sprite3

x: -128 y: -20 direction: 90

Scripts

Costumes

Sounds

My Tate - Elizabeth



x: 230 y: 200

New sprite:



Stage

when green flag clicked

set instrument to 11

hide

wait 5 secs

show

go to x: 117 y: -13

say This is a picture of a farm. for 2 secs

glide 2 secs to x: -42 y: -33

say This is my window.I put a backyard for the scene

glide 1 secs to x: -128 y: -20

hide

when green flag clicked

go to x: -128 y: -20

hide

wait 5 secs

show

go to x: 26 y: -51

move 10 steps

turn 15 degrees

turn 15 degrees

point in direction 90

point towards

go to x: -128 y: -20

go to

glide 1 secs to x: -128 y: -20

change x by 10

set x to 0

change y by 10

set y to 0

if on edge, bounce

x position

y position

direction

How do you help your students see the relevance?

Everyone plays video games, you know? This is something that's true now. It wasn't always true, but in this generation, they all play games. Everybody plays video games, like every single person. Why wouldn't you want to learn about that more and be engaged with that more?

So that's my starting point. Everyone plays video games. You've all had experiences where you got addicted to a video game. How does that work – and how do you make one?

Interview with Todd
High-school teacher



teacher as guide



fear of not knowing
curriculum requirements



teacher as guide



fear of not knowing
curriculum requirements



teacher as guide



challenging expectations
identifying alternatives



Progress

data collection
thematic analysis
descriptive writing

design principles (*forthcoming*)

Contributions

Stories

Resources

Discussions

Members

Events

What is Scratch?

Scratch is a programming language that makes it easy to create interactive art, stories, simulations, and games – and share those creations online.

[Learn more »](#)

What is ScratchEd?

ScratchEd is an online community where Scratch educators:



share stories



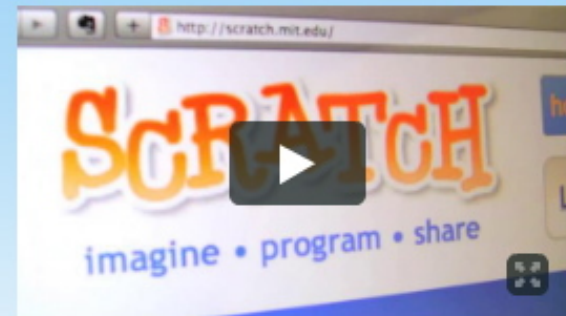
exchange resources



ask questions



find people



Get Started with Scratch

Imagine the creative possibilities with Scratch and the online community in this intro video.

New Stories



Pilot Perspectives: Reflections on the Scratch Curriculum Guide by Alvin Kroon of Kamiak High School

In this special ScratchEd story series, K-12 educators who participated in the Scratch curriculum guide draft pilot program share their experiences and feedback.

ScratchEd Team posted this 1 week ago

<Code Club> & 2012 National STEM Video Game Challenge

5th and 6th graders using Scratch to create video games for the 2012 National STEM Video Game Challenge

Matt Arnold posted this 2 weeks ago



Student's View: The Benefits of Understanding Programming

New Resources



Top Scratcher : Apprendre à créer un jeu video en 5 Parties

Christophe THOMAS posted this 2 days ago



Traducción de Scratch al Guaraní

Fundación Gabriel Piedrahita Uribe posted this 6 days ago



Cómo comprimir imágenes y sonidos en Scratch

Fundación Gabriel Piedrahita Uribe posted this 6 days ago

New Discussions

Misconceptions when teaching Scratch

Naomi Golf commented on this 10 hours ago

Taking part in ScratchED community research

orad welsberg commented on this 2 days ago

Scratch@MIT Registration Now Open

Susan Ettenheim commented on this 2 days ago

WebMaking Instructor Community Conference

ScratchEd Team posted this 2 days ago

Two settings:

Scratch online community

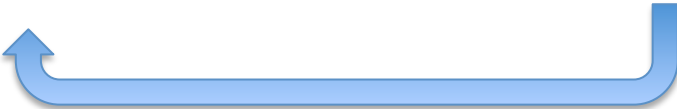
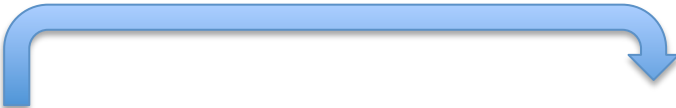
designing
personalizing
sharing
reflecting

K-12 classrooms

designing
personalizing
sharing
reflecting

agency

structure



What is the best of both worlds?

in school vs. out of school





Thank You

Harvard

Jeanne Wellings
Robyn Bykofsky
Michelle Chung
Ashley Lee
Amanda Valverde

Joe Prempeh

Linda Qian

Anushka Paul

Krista Shapton

Mydhili Bayyapunedi

Gracie Elqura

Mylo Lam

Aaron Morris

Vanessa Gennarelli

Jen Lavalle

Alex Schoenfeld

Vanity Gee

MIT

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