Four Questions About Scratch

ScratchEd Webinar Series

Monday, January 24, 2011

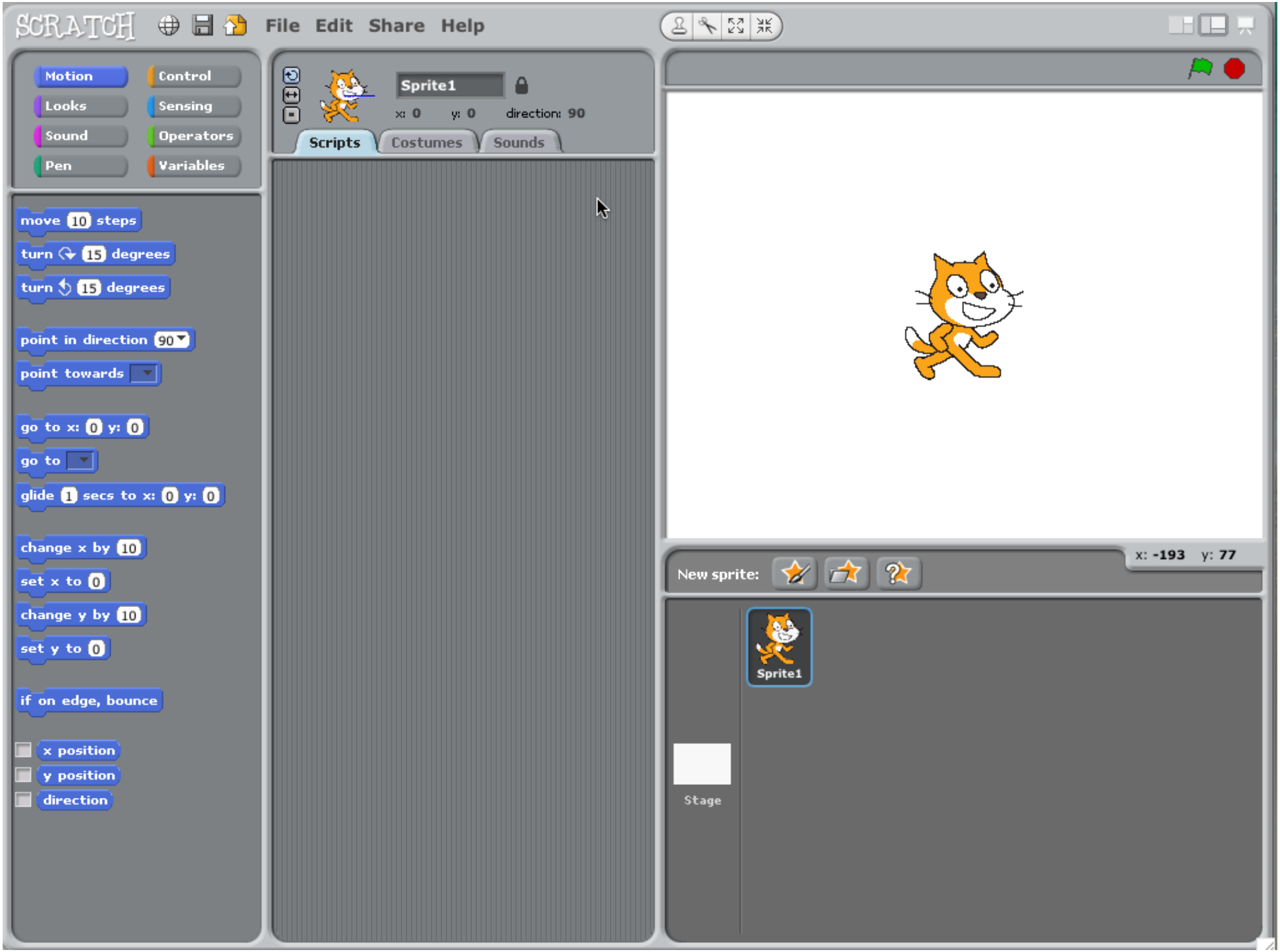
7pm-8pm EST

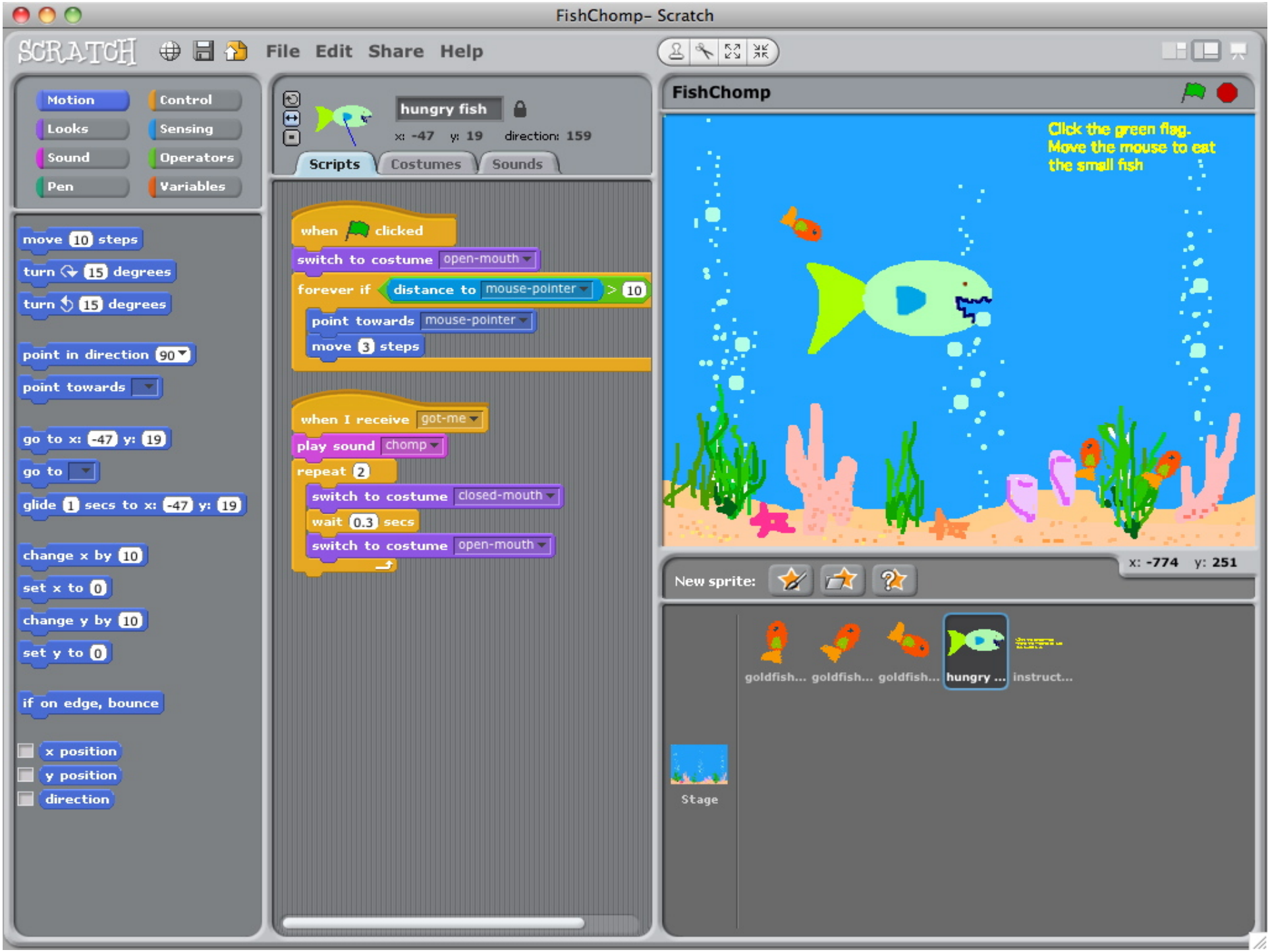
Hosted by Mitch Resnick and Karen Brennan

Four Questions

1. What is Scratch?
2. What is good Scratch?
3. What is Scratch good for?
4. How do different people think about these questions differently?

1. What is Scratch?


SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
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
Sprite1
x: 0 y: 0 direction: 90
Scripts
Costumes
Sounds
New sprite:
x: -193 y: 77
Sprite1
Stage


FishChomp- Scratch
SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: -47 y: 19
go to
glide 1 secs to x: -47 y: 19
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
hungry fish
x: -47 y: 19 direction: 159
Scripts
Costumes
Sounds
when clicked
switch to costume open-mouth
forever if distance to mouse-pointer > 10
point towards mouse-pointer
move 3 steps
when I receive got-me
play sound chomp
repeat 2
switch to costume closed-mouth
wait 0.3 secs
switch to costume open-mouth
FishChomp
Click the green flag.
Move the mouse to eat
the small fish
x: -774 y: 251
New sprite:
goldfish...
goldfish...
goldfish...
hungry ...
instruct...
Stage

SCRATCH

imagine • program • share

home | projects | galleries | support | forums | about | Language

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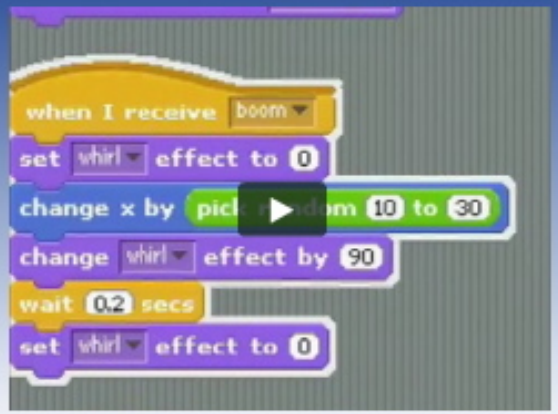
search

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

Check out the 1,541,856 projects from around the world!

To create your own projects:

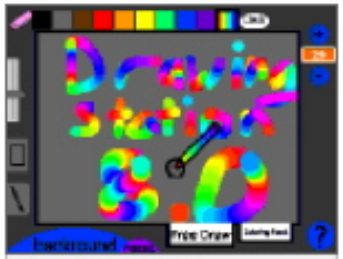
Download Scratch



Featured Projects

See more

Animal Identifi...
by yoshi-fan



drawing station...
by soccerfirst

1D to 4D maze(w...
by harry_hello123

Projects Selected by gnk2200

Learn more

Scratch Tours

New to Scratch? Take a tour to see what Scratchers are creating and sharing.

Take a tour

Video Tutorials

Check out our new collection of intro video tutorials.

Learn more

ScratchEd

Day Dream

cremeglace shared it 2 years, 10 months ago

4685 views, 18 taggers, 168 people love it, 456 remixes by 411 people, 487 downloads, in 35 galleries

Love it? Add to my favorites? Flag as inappropriate?

Download this project!

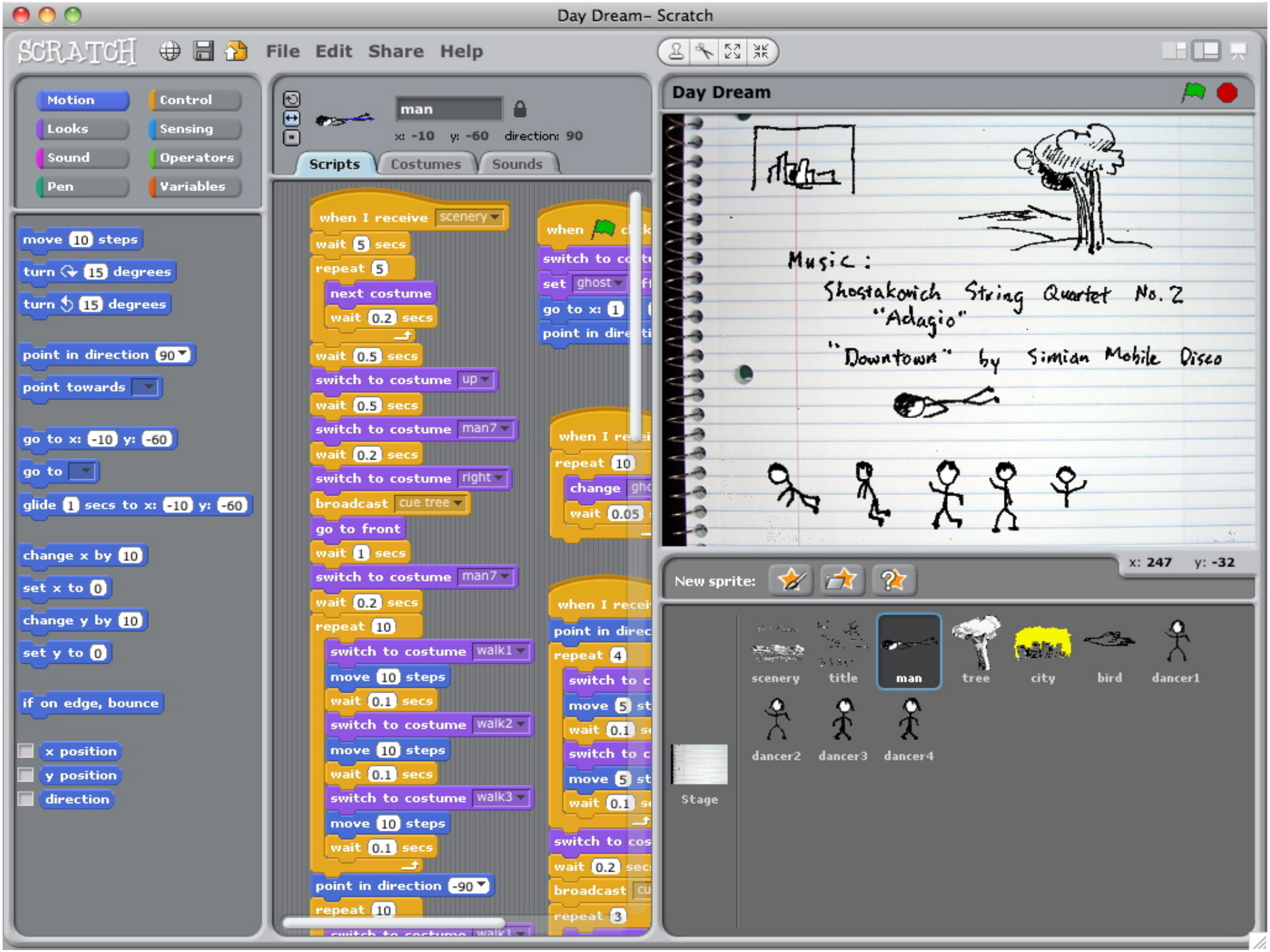
Download the 10 sprites and 50 scripts of "Day Dream" and open it in Scratch

Project Notes

A short animation.
http://jueseph.com/blog/2007/09/i-learned-in-computer-science-50/
Click on the tree and mountains for some interesting effects.

For those of you who are curious, I actually drew in a sketchbook, took digital pictures, and then ran them through photoshop to get the right contrast to extract pure black/white figures. Really clumsy, but the project was due the next day and I didn't have a scanner on hand. The whole process took 6 hours, most of it spent drawing and processing pictures and extracting music clips, the rest spent adjusting wait times. The actually coding was simple because the whole thing is pretty linear and non-interactive.

Thanks for the comments!


Day Dream– Scratch
SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: -10 y: -60
go to
glide 1 secs to x: -10 y: -60
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
man
x: -10 y: -60 direction: 90
Scripts
Costumes
Sounds
when I receive scenery
wait 5 secs
repeat 5
next costume
wait 0.2 secs
wait 0.5 secs
switch to costume up
wait 0.5 secs
switch to costume man7
wait 0.2 secs
switch to costume right
broadcast cue tree
go to front
wait 1 secs
switch to costume man7
wait 0.2 secs
repeat 10
switch to costume walk1
move 10 steps
wait 0.1 secs
switch to costume walk2
move 10 steps
wait 0.1 secs
switch to costume walk3
move 10 steps
wait 0.1 secs
point in direction -90
repeat 10
Day Dream
Music:
Shostakovich String Quartet No. 2
"Adagio"
"Downtown" by Simian Mobile Disco
x: 247 y: -32
New sprite:
scenery
title
man
tree
city
bird
dancer1
dancer2
dancer3
dancer4
Stage

Newest Projects in Math projects

Sort by: creator | title | creation date | addition date |

Subscribe

Factor Factory
by lutzste

GCD
by lutzste

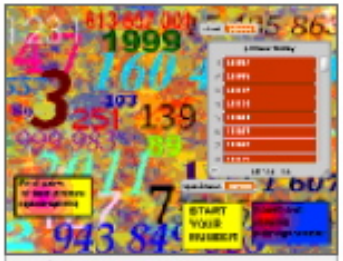
Binary Code V3
by MoreGamesNow

The Cat's Cal...
by RedGoldfish

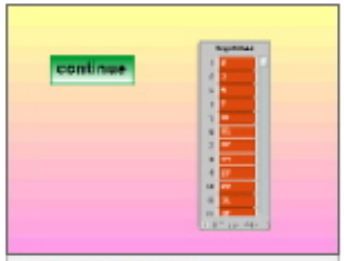
Binary Code V2
by MoreGamesNow

Binary Code
by MoreGamesNow

Math Helper W...
by Reese-O



BIG NUM Prime...
by lutzste



Primegenerato...
by lutzste

Gallery owner: kevin_karplus

Created: 2 years, 10 months ago

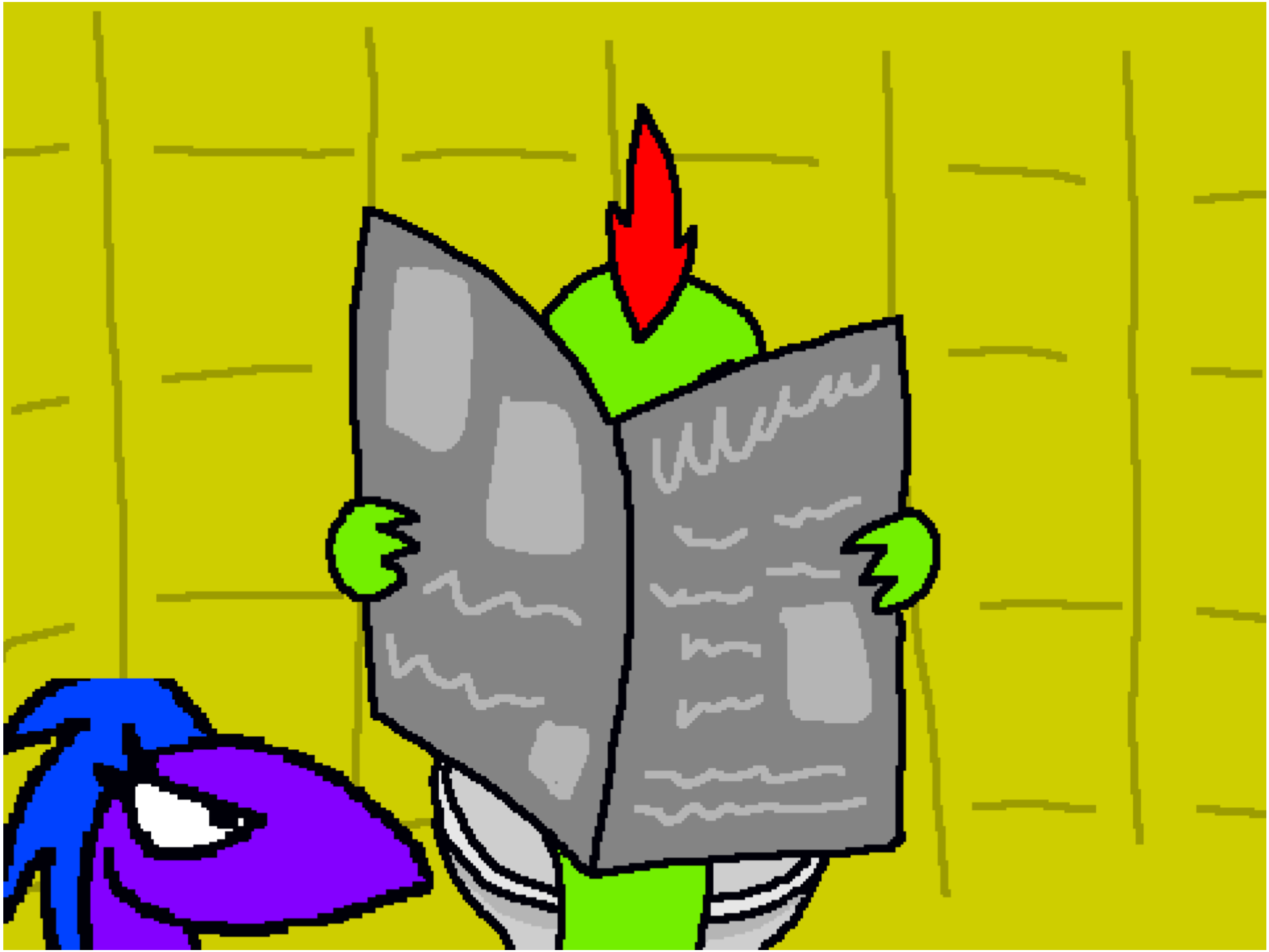
Gallery description

This gallery is for projects that teach some mathematics, show how to implement some tricky math in scratch, or use mathematics in some substantial way.

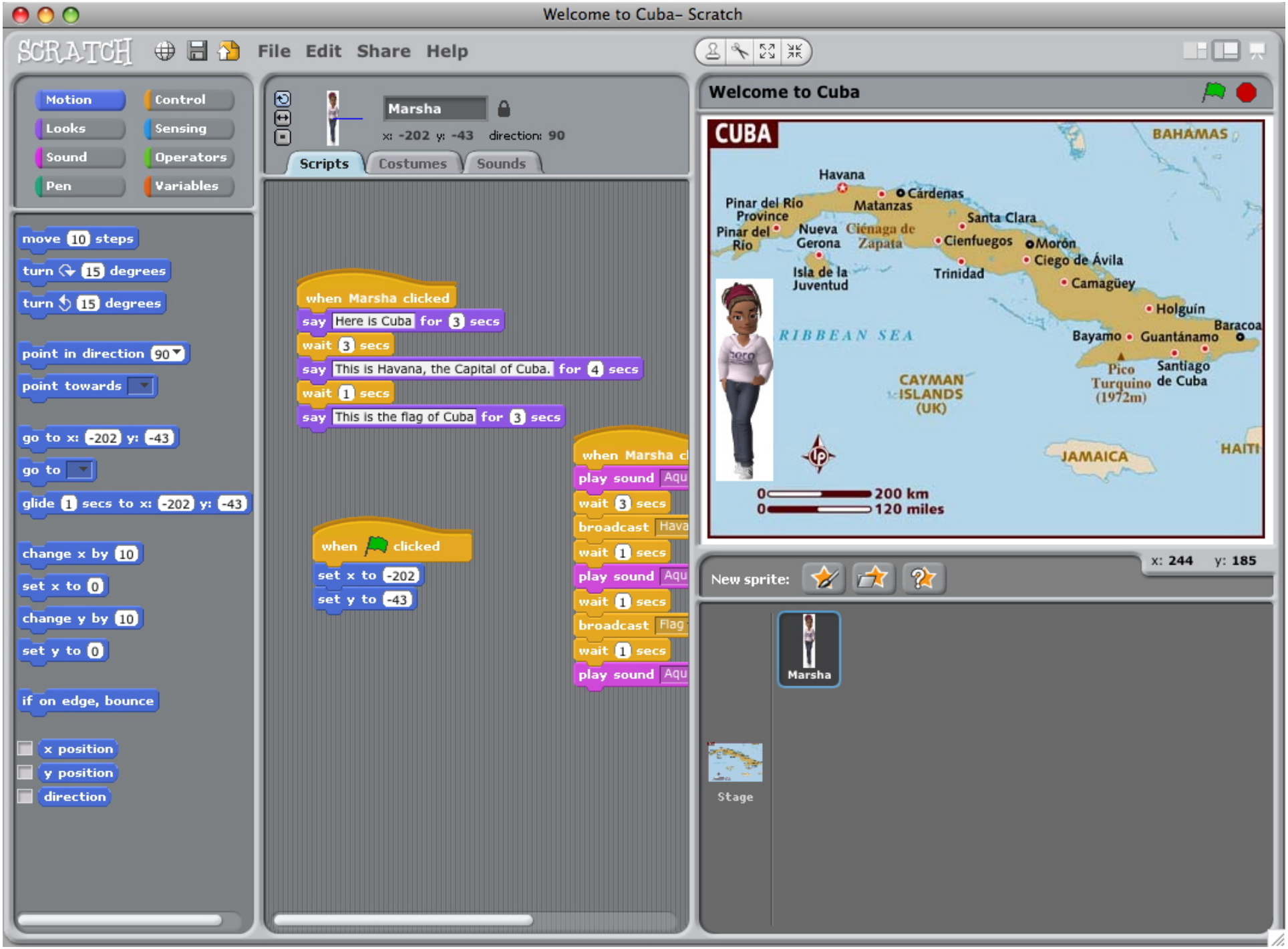
It is *not* intended for projects that just show xy coordinates or other things that apply to almost any scratch program.

Anyone can add to the gallery, but I will try to remove non-mathematical projects.

Examples from Arts



Examples from Humanities


Welcome to Cuba– Scratch
SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: -202 y: -43
go to
glide 1 secs to x: -202 y: -43
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
Marsha
x: -202 y: -43 direction: 90
Scripts
Costumes
Sounds
when Marsha clicked
say Here is Cuba for 3 secs
wait 3 secs
say This is Havana, the Capital of Cuba. for 4 secs
wait 1 secs
say This is the flag of Cuba for 3 secs
when clicked
set x to -202
set y to -43
when Marsha cl
play sound Aqu
wait 3 secs
broadcast Hava
wait 1 secs
play sound Aqu
wait 1 secs
broadcast Flag
wait 1 secs
play sound Aqu
Welcome to Cuba
CUBA
BAHAMAS
Havana
Cárdenas
Matanzas
Pinar del Río Province
Pinar del Río
Nueva Gerona
Ciénaga de Zapata
Santa Clara
Cienfuegos
Morón
Ciego de Ávila
Isla de la Juventud
Trinidad
Camagüey
Holguín
Baracoa
Bayamo
Guantánamo
Santiago de Cuba
Pico Turquino (1972m)
CAYMAN ISLANDS (UK)
JAMAICA
HAITI
0 200 km
0 120 miles
x: 244 y: 185
New sprite:
Marsha
Stage

The Lion and the Boar
An Aesop Fable

By Farzana and Jennifer
P.S. 131 Grade 5


Rapa Nui!
Start

Examples from Social Sciences


The Scratch survey
HAVE YOU TAKEN THE SURVEY YET?
IF NOT, PLEASE ADD YOUR SURVEY TO THE OTHERS
AT
WWW.SCRATCHSURVEY.WEEBLY.COM
OK
THE OPINIONS PRESENTED IN THIS SURVEY ARE NOT NESSCARILY THE OPINIONS OR BELIEFS OF SPARKS.

20

DO YOU KNOW EUROPE?

0

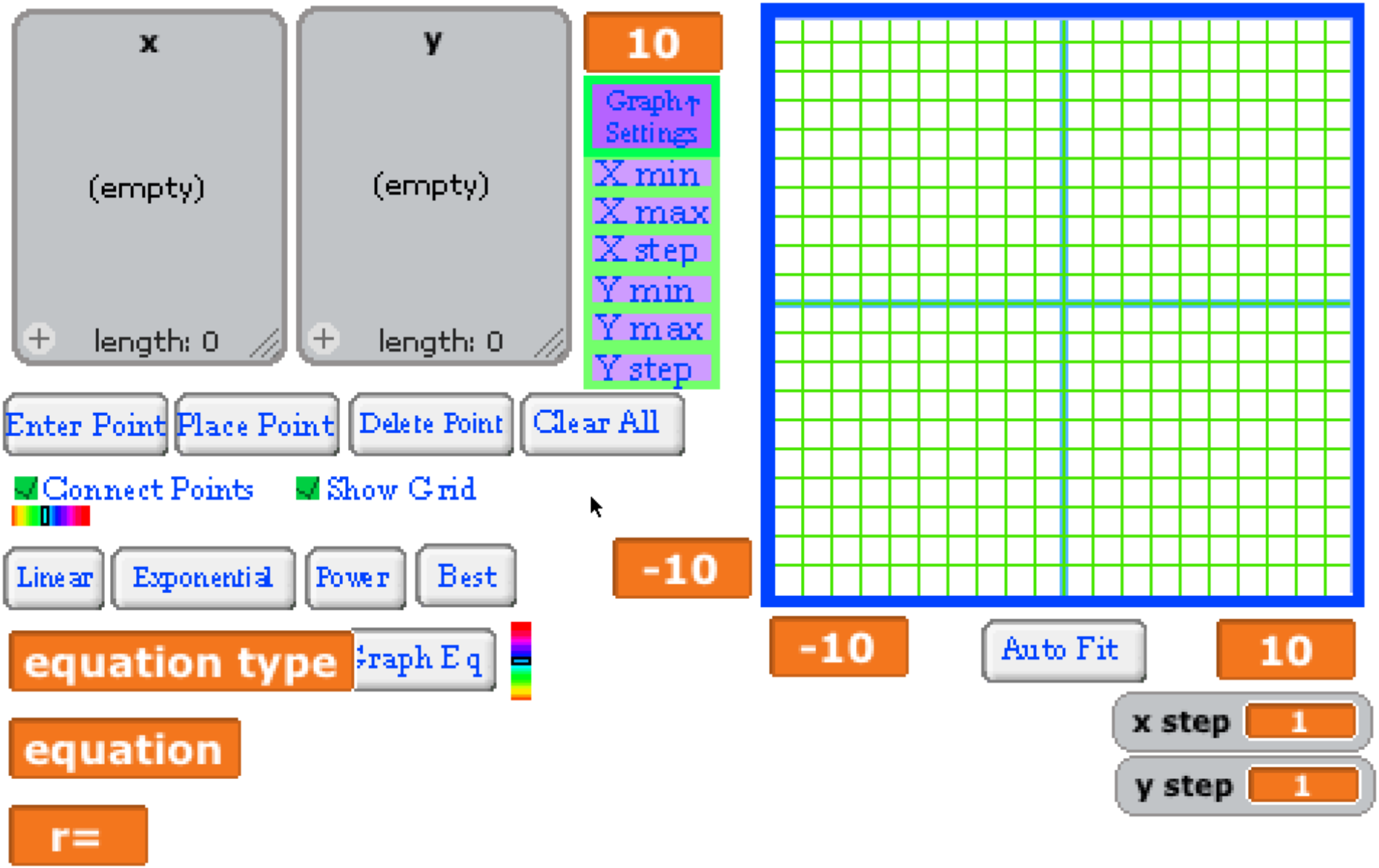
States Capitals

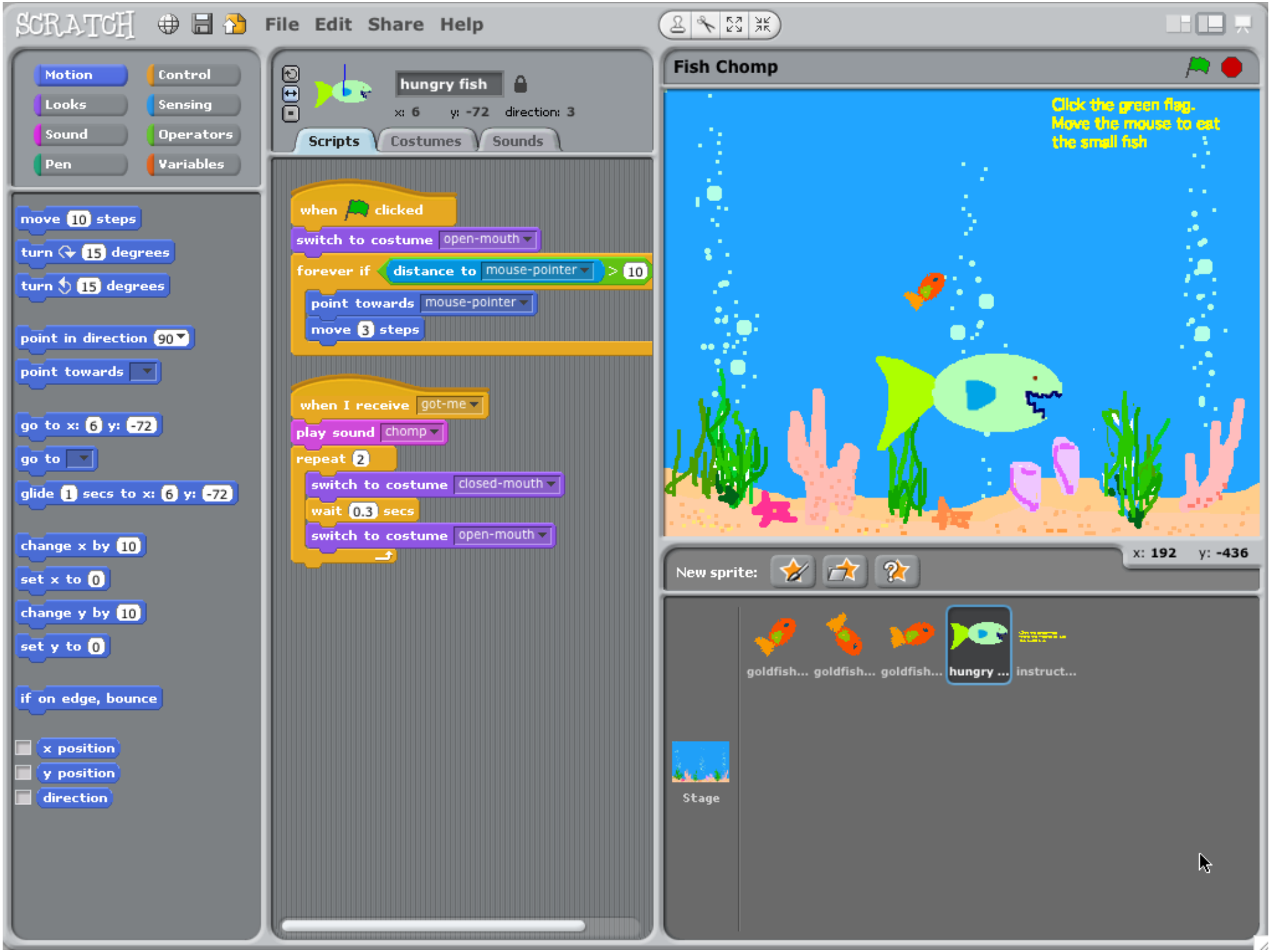
score 0

Learning Mode

Find: California

Examples from Mathematics & Statistics


x
(empty)
length: 0
y
(empty)
length: 0
10
Graph Settings
X min
X max
X step
Y min
Y max
Y step
Enter Point
Place Point
Delete Point
Clear All
Connect Points
Show Grid
Linear
Exponential
Power
Best
-10
-10
Auto Fit
10
equation type
Graph Eq
equation
r=
x step
1
y step
1

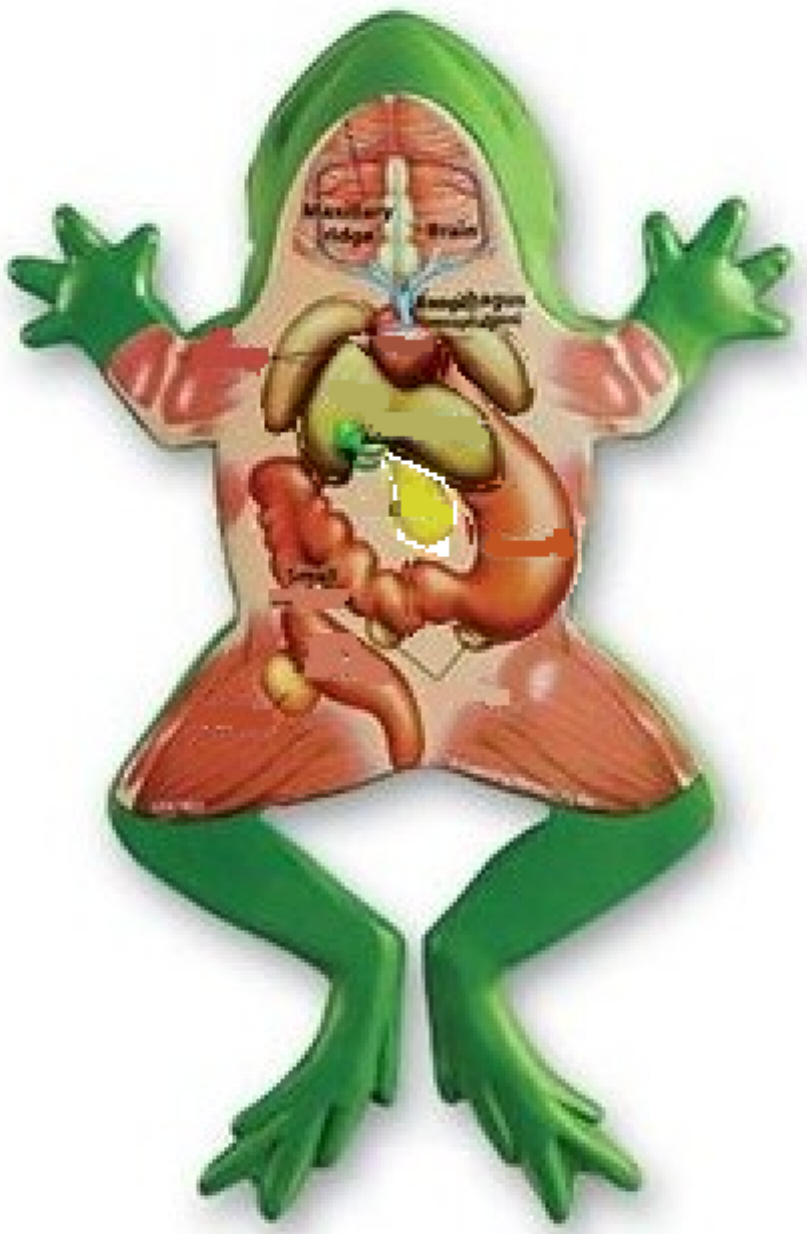

SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: 6 y: -72
go to
glide 1 secs to x: 6 y: -72
change x by 10
set x to 0
change y by 10
set y to 0
if on edge, bounce
x position
y position
direction
hungry fish
x: 6 y: -72 direction: 3
Scripts
Costumes
Sounds
when clicked
switch to costume open-mouth
forever if distance to mouse-pointer > 10
point towards mouse-pointer
move 3 steps
when I receive got-me
play sound chomp
repeat 2
switch to costume closed-mouth
wait 0.3 secs
switch to costume open-mouth
Fish Chomp
Click the green flag.
Move the mouse to eat
the small fish
x: 192 y: -436
New sprite:
goldfish...
goldfish...
goldfish...
hungry ...
instruct...
Stage

Examples from Science

Stomach

Heart

Lungs



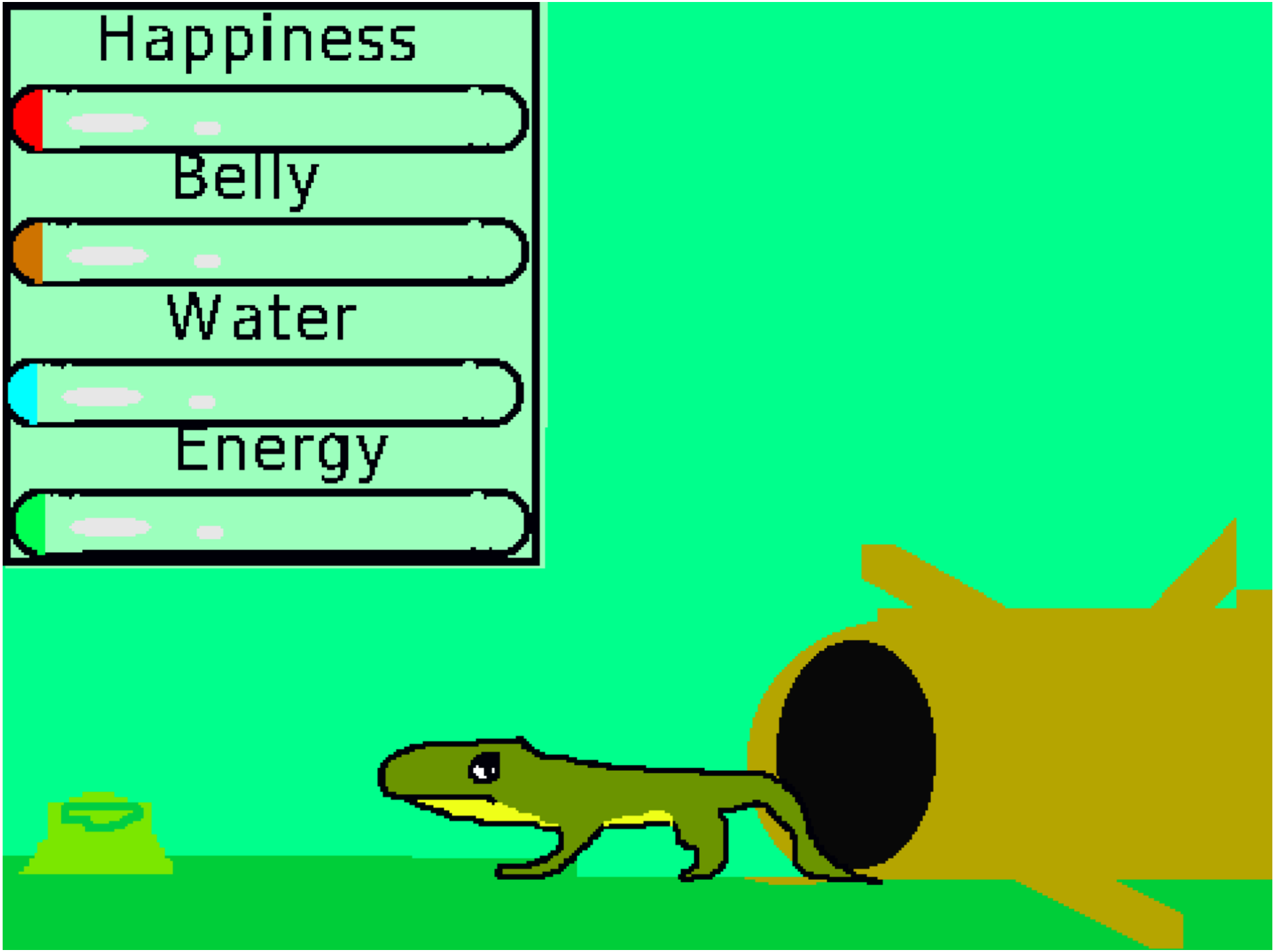
Pancreas

Gall Bladder

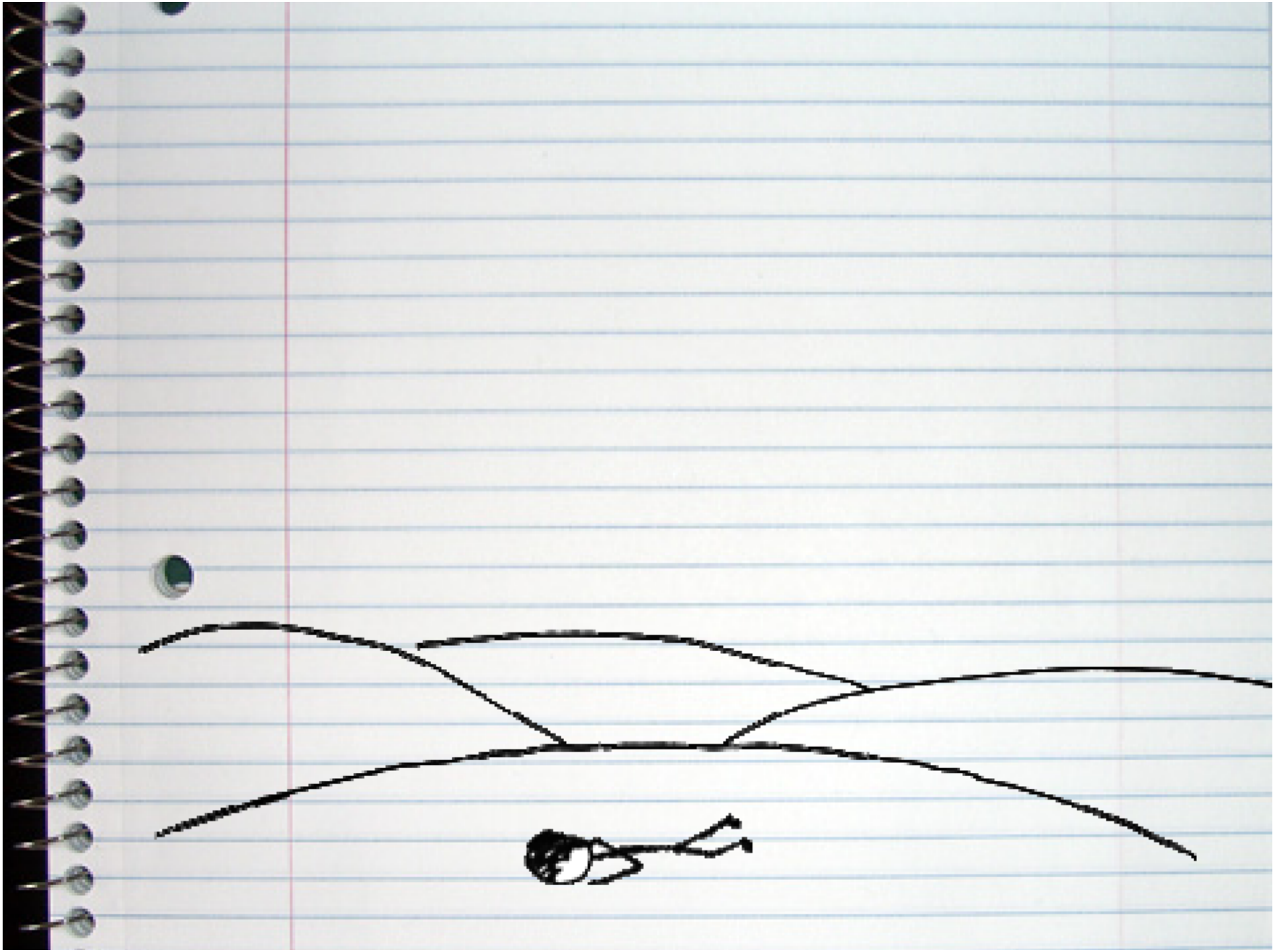
Liver

Points 0

Examples from Computer Science & Technology

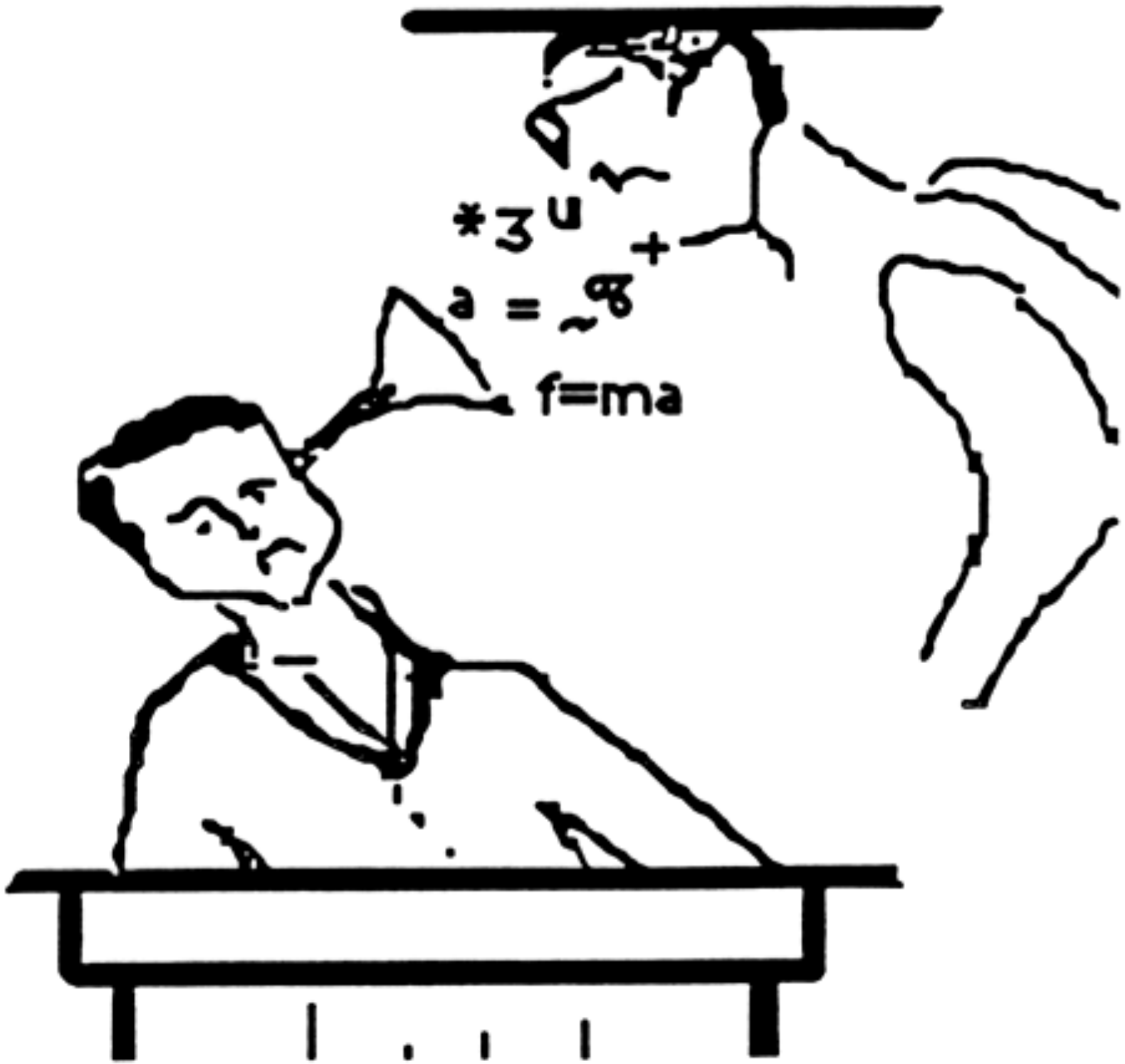

Happiness
Belly
Water
Energy


SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: -9 y: -87
go to
glide 1 secs to x: -9 y: -87
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
Jimmy
x: -9 y: -87 direction: 90
Scripts
Costumes
Sounds
when clicked
ask Would you like to know the initials of someone who has a crush on you? and wait
if answer = Yes or answer = No
if answer = Yes
say join item any of initials item any of initials2 for 2 secs
say Good luck finding your crush! for 2 secs
if answer = No
say Thanks for stopping by! for 2 secs
else
say Please respond with a yes or no answer. Click the green flag if you would like me to ask agai
Crush Initials Generator
x: 247 y: -648
New sprite:
Jimmy
Stage



2. What is good Scratch?

Scratch is not just a tool,
it represents an approach to learning.


f=ma

Design-Based Learning

Learning through design

Learning through interests

Learning through collaboration

Learning through reflection

Design-Based Learning

Learning through design

Learning through interests

Learning through collaboration

Learning through reflection

“Children don’t get ideas; they make ideas. Learners are particularly likely to make new ideas when they are actively engaged in making some type of external artifact – be it a robot, a poem, a sand castle, or a computer program.”

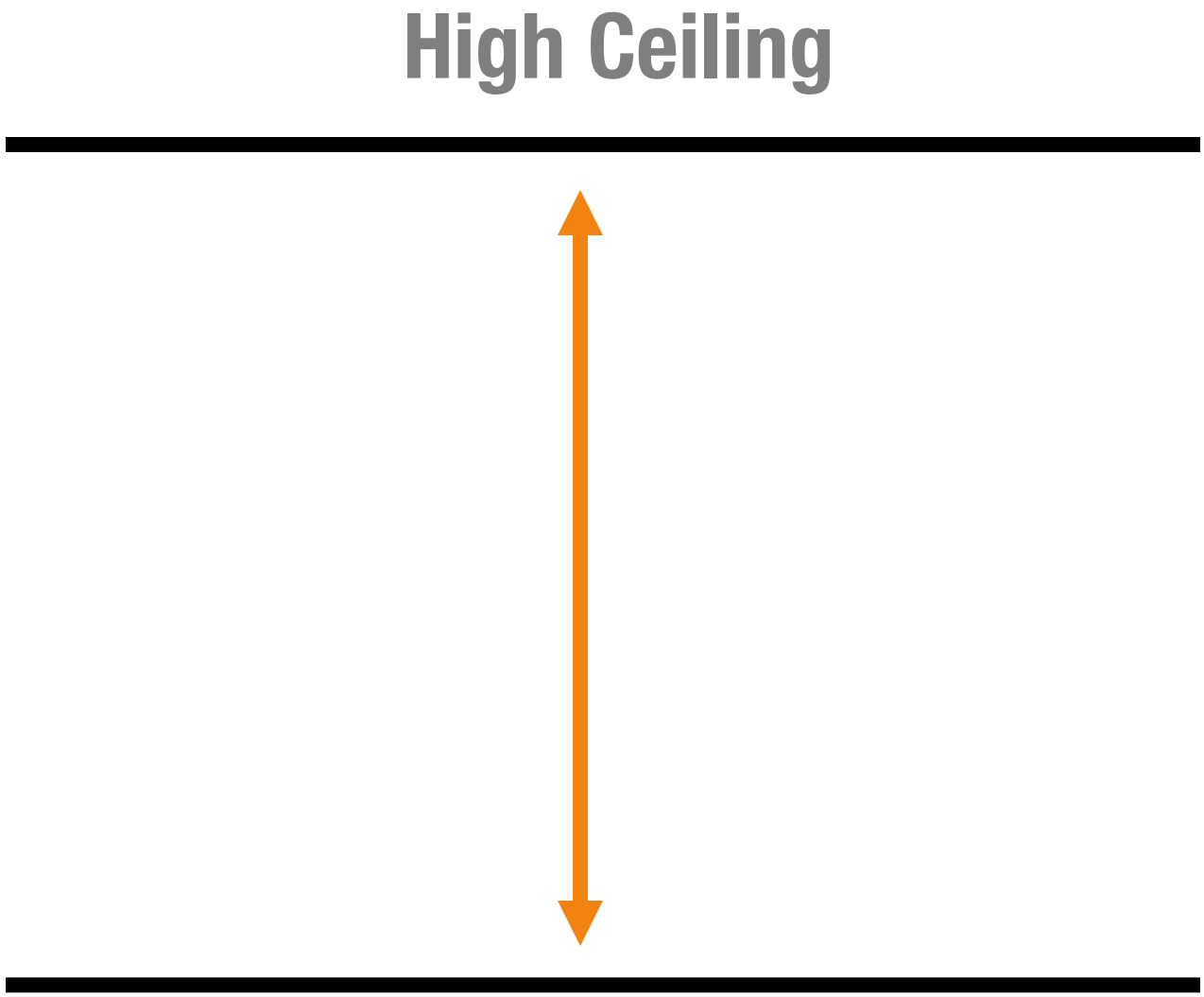
Design-Based Learning

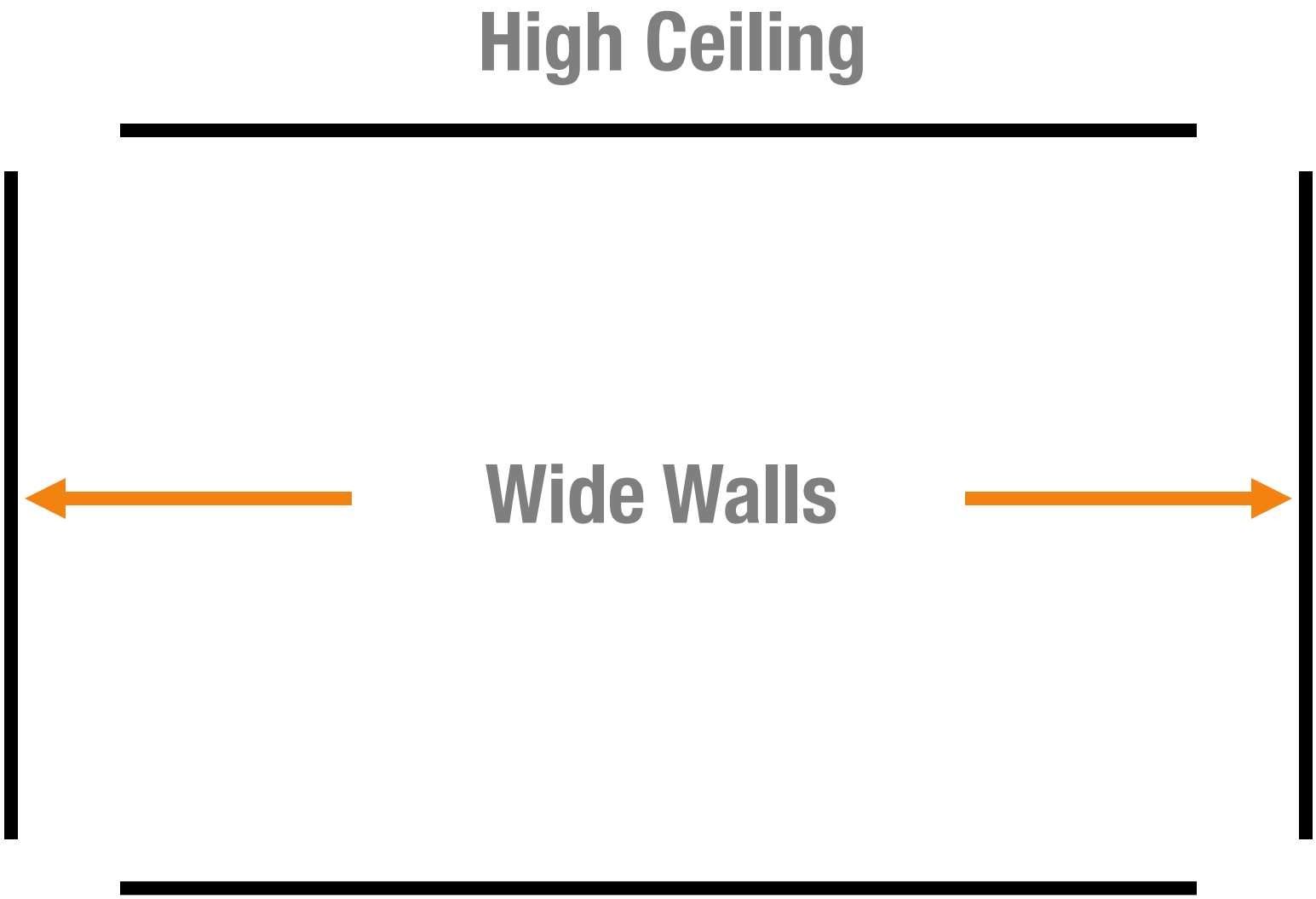
Learning through design

Learning through interests

Learning through collaboration

Learning through reflection


High Ceiling
Low Floor


High Ceiling
Wide Walls
Low Floor

Design-Based Learning

Learning through design

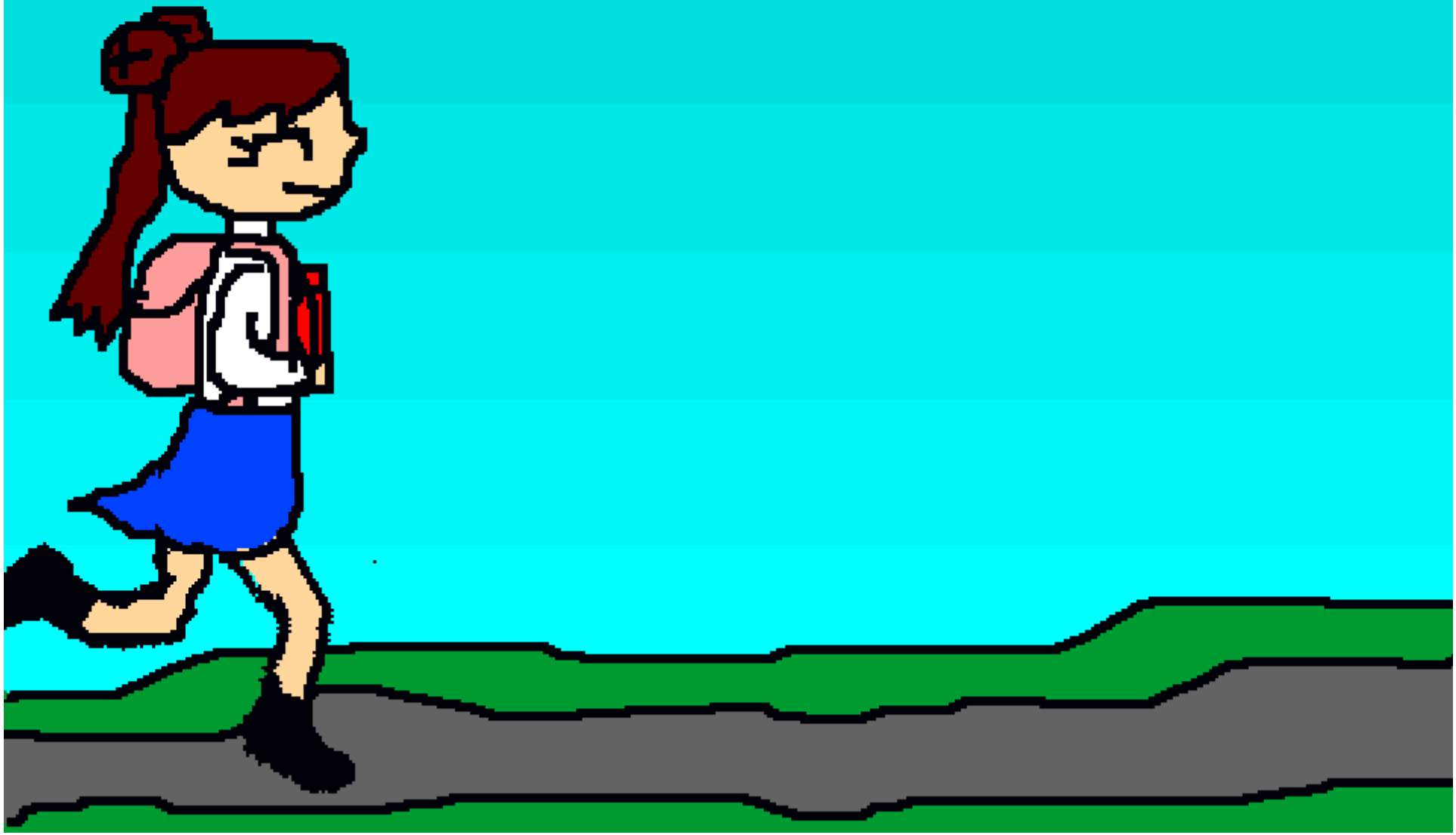
Learning through interests

Learning through collaboration

Learning through reflection


Creativity is a
social process
SAMSUNG

Before school...



Design-Based Learning

Learning through design

Learning through interests

Learning through collaboration

Learning through reflection

Reflection helps us identify what we know and what we need to know

#1

Critique Groups

The worst feeling in the world is to pour your hard work and creativity into a project only to have it ignored completely by the Scratch community. The problem is not that the Scratch community doesn't care. In fact this is one of the most vibrant and positive communities I've seen online. The problem is that we are all overwhelmed with the number of new projects.

Joining a small critique group (5-7 members) will give you **valuable feedback** on your projects. Members of your group can highlight what is great about your project and suggest ways to improve it. In addition, the act of critiquing other peoples work can be one of the most powerful ways to punch your own skills to the next level.

If you are new to Scratch, look through the list of open groups below.
1. Find a group that feels like a good fit and is currently accepting members.
2. Bookmark the gallery.
3. Introduce yourself with comment to the group's gallery.
3. Offer a critique of at least one project. Read the Critique Guidelines and learn from these helpful examples

If you are *extremely* committed to the Scratch community, you might want to start your

Design-Based Learning

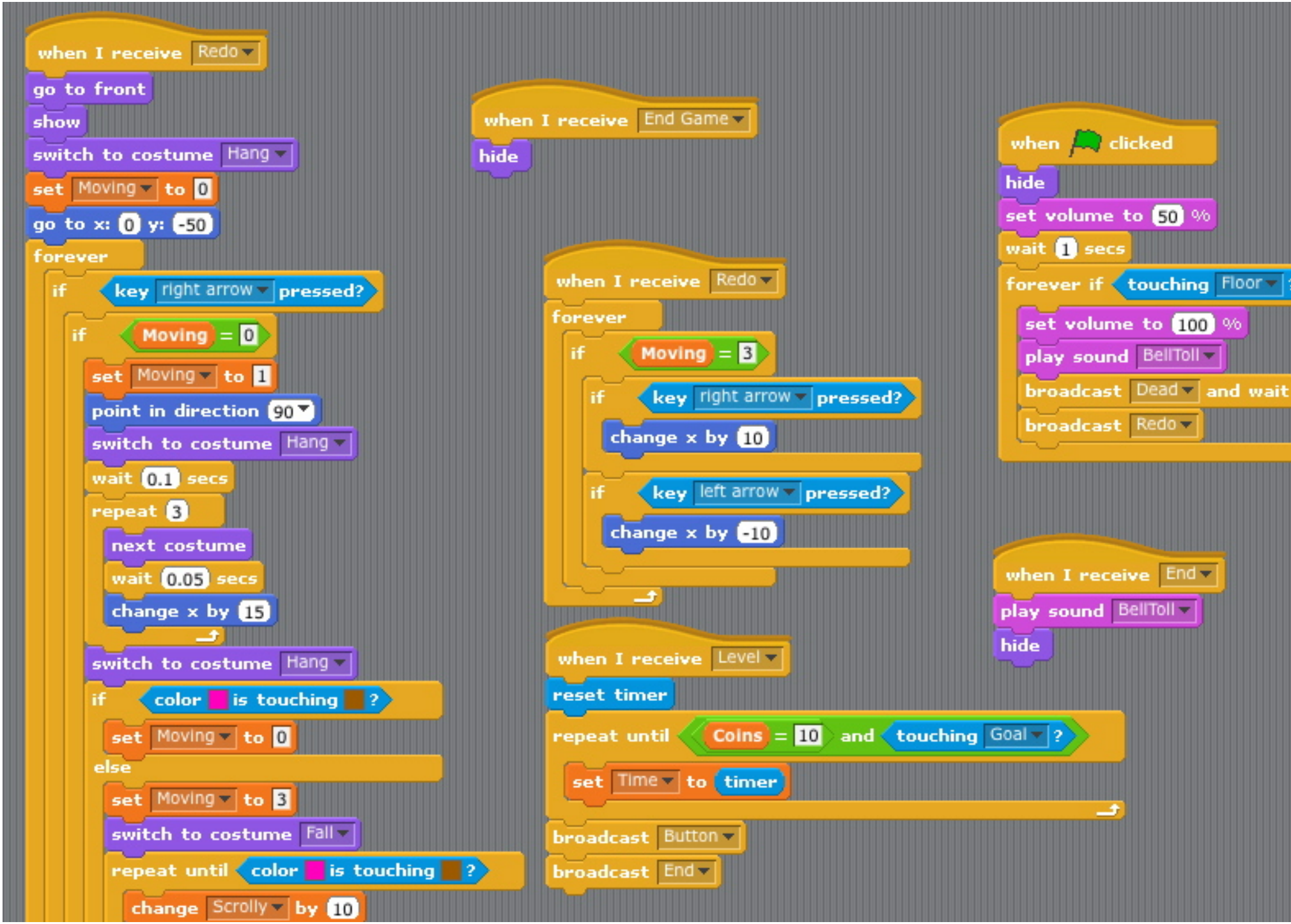
Learning through design

Learning through interests

Learning through collaboration

Learning through reflection

3. What is Scratch good for?


when I receive Redo
go to front
show
switch to costume Hang
set Moving to 0
go to x: 0 y: -50
forever
if key right arrow pressed?
if Moving = 0
set Moving to 1
point in direction 90
switch to costume Hang
wait 0.1 secs
repeat 3
next costume
wait 0.05 secs
change x by 15
switch to costume Hang
if color is touching ?
set Moving to 0
else
set Moving to 3
switch to costume Fall
repeat until color is touching ?
change Scrolly by 10
when I receive End Game
hide
when I receive Redo
forever
if Moving = 3
if key right arrow pressed?
change x by 10
if key left arrow pressed?
change x by -10
when I receive Level
reset timer
repeat until Coins = 10 and touching Goal ?
set Time to timer
broadcast Button
broadcast End
when clicked
hide
set volume to 50 %
wait 1 secs
forever if touching Floor
set volume to 100 %
play sound BellToll
broadcast Dead and wait
broadcast Redo
when I receive End
play sound BellToll
hide

Computational Thinking

Computational thinking is a fundamental skill for everyone, not just for computer scientists.

Wing, Computational thinking

Computational Thinking

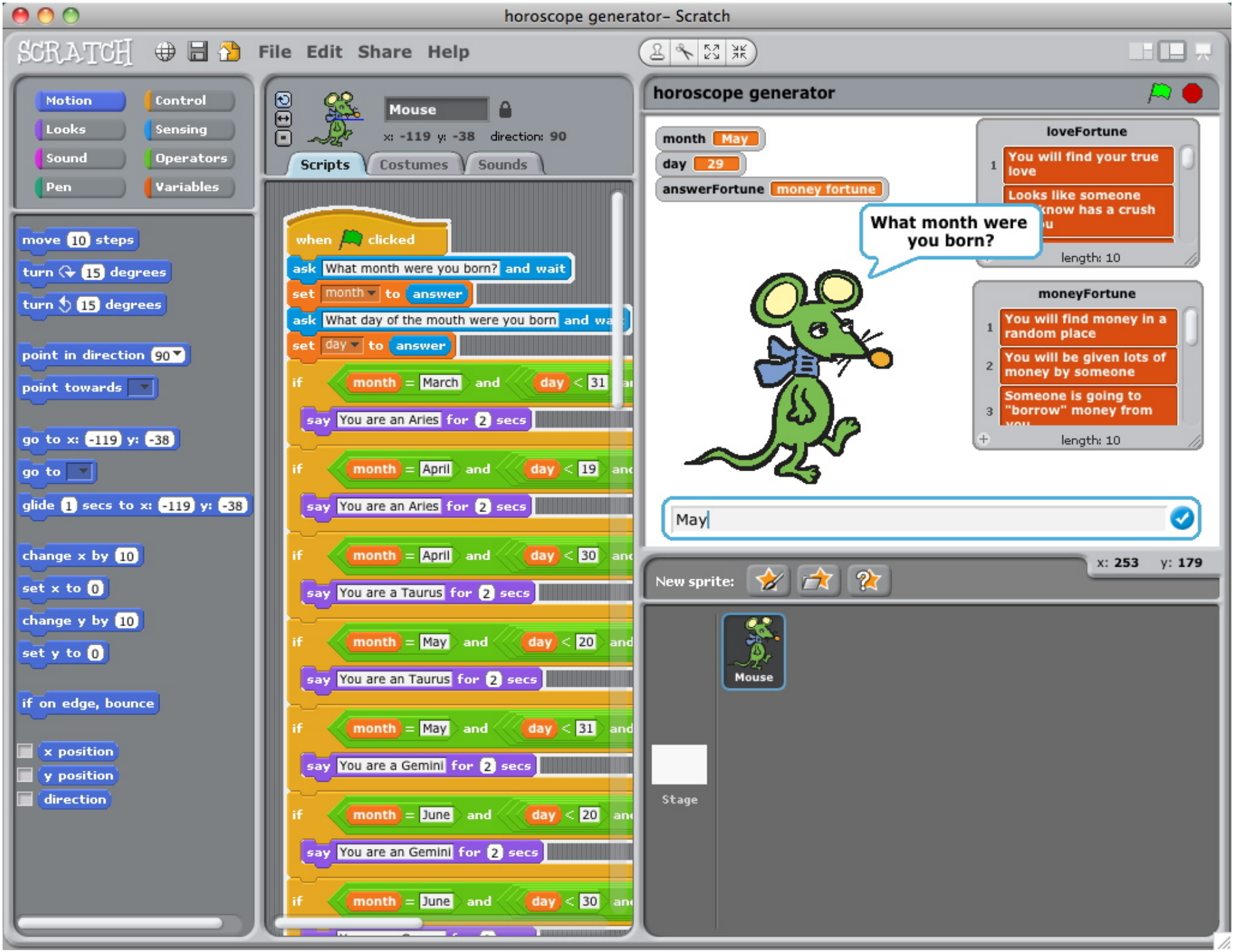
Computational concepts

Computational practices

Computational perspectives

Computational Concepts

sequence
loops
parallelism
events
conditionals
operators
variables
lists


horoscope generator- Scratch
SCRATCH
File Edit Share Help
Motion
Control
Looks
Sensing
Sound
Operators
Pen
Variables
move 10 steps
turn 15 degrees
turn 15 degrees
point in direction 90
point towards
go to x: -119 y: -38
go to
glide 1 secs to x: -119 y: -38
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
Mouse
x: -119 y: -38 direction: 90
Scripts
Costumes
Sounds
when clicked
ask What month were you born? and wait
set month to answer
ask What day of the mouth were you born and wa
set day to answer
if month = March and day < 31
say You are an Aries for 2 secs
if month = April and day < 19
say You are an Aries for 2 secs
if month = April and day < 30
say You are a Taurus for 2 secs
if month = May and day < 20
say You are an Taurus for 2 secs
if month = May and day < 31
say You are a Gemini for 2 secs
if month = June and day < 20
say You are an Gemini for 2 secs
if month = June and day < 30
horoscope generator
month May
day 29
answerFortune money fortune
What month were you born?
loveFortune
1 You will find your true love
Looks like someone know has a crush
length: 10
moneyFortune
1 You will find money in a random place
2 You will be given lots of money by someone
3 Someone is going to "borrow" money from
length: 10
May
New sprite:
x: 253 y: 179
Mouse
Stage

Computational Practices

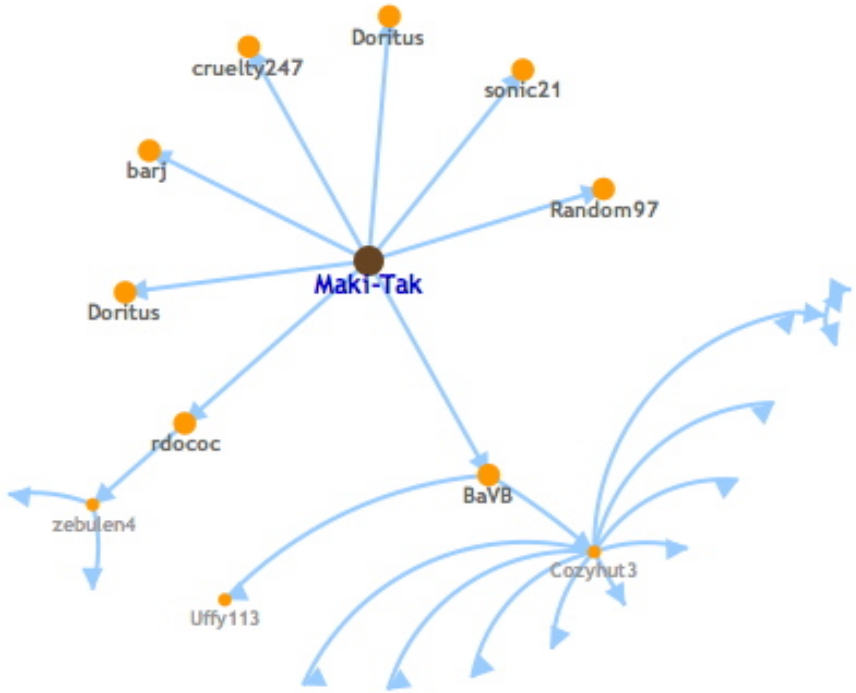
incremental/iterative

testing/debugging

reuse/remix

abstraction/modularization

Remix Visualization



Level 1

Maki-Tak

Computational Perspectives

expressing

connecting

understanding

“I love Scratch. Wait, let me rephrase that –
Scratch is my life. I have made many projects.

Now I have what I call a ‘programmer’s mind’.

That is where I think about how anything is programmed.
This has gone from toasters, car electrical systems,
and soooo much more.”

In promoting computational thinking with K-12 students we are seeking to increase their sense of agency, or ability to take effective control of their lives both now and in the future.

ITEST, Computational thinking in K-12: Defining the space

4. How do different people think about these questions differently?

Diverse settings make Scratch diverse

- curricular areas
- age
- in/after/outside school

“I think programming is fun. ... I think it can be useful. It’s helped me have something to do. If I’m bored, I play around on Scratch until I can do stuff.”

“My dad is a programmer. He works on websites and databases. So, of course, I looked up to him. When he showed me something, and it was programming, I was like, ‘Oh yeah! So I’ll try that, that way I can be like him’ type of thing. I didn't actually have any programming knowledge before that, so Scratch was the start.”

“They say that teaching is the highest form of learning or understanding. I think that making math projects has actually helped me understand math concepts better than learning them in school.”

For Scratch to reach its full potential, we need to think *across* contexts and consider all four questions

Questions?

Thank You!

http://scratched.media.mit.edu
http://events.scratch.mit.edu

Next webinar: Hosting a Scratch Day event
Monday, February 28, 2011
7pm-8pm EST