

An Introduction to the Scratch Curriculum Guide

ScratchEd Webinar Series

Monday, August 22, 2011

7pm-8pm EST

Hosted by Mitch Resnick and Karen Brennan

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

A guide to supporting the development of computational thinking:

- computational concepts
- computational practices
- computational perspectives

It follows a design-based approach to the learning environment, which emphasizes:

- designing
- personalizing
- collaborating
- reflecting

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

**An introduction to computational
creation with Scratch, in:**

6 parts

20 sessions

**A collection of session plans, with
accompanying:**

handouts

Scratch projects

videos

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

Any teacher who wants to support student development of computational thinking through exploration with Scratch.

The guide is written to be:
discipline-neutral
grade-neutral

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

Time

~twenty 50-minute sessions

Materials

computers (min 1 per 2 students)

projector or whiteboard

speakers

network connection

design notebooks (digital?)

What is this guide?

Who is this guide for?

What do I need?

How should I use this guide?

How was this guide made?

Approach from a design-based perspective:

designing

personalizing

collaborating

reflecting

You don't need to be a Scratch "expert"!

What is this guide?	Google-funded Creative Computing workshops
Who is this guide for?	
What do I need?	NSF-funded ScratchEd project
How should I use this guide?	
How was this guide made?	Amazing workshop participants and ScratchEd online community members

**a six-part introduction
to computational creation with Scratch**

Part 1: Introduction

Part 2: Music

Part 3: Stories

Part 4: Games

Part 5: Project

Part 6: Conclusion

Part 1: Introduction

Part 2: Music

Part 3: Stories

Part 4: Games

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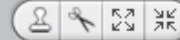
Session 1

What is creative computing?

SCRATCH



File Edit Share Help



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: 294 y: -117

New sprite:



Stage

SCRATCH



File Edit Share Help



Motion

Control

Looks

Sensing

Sound

Operators

Pen

Variables



Sprite1



x: 0 y: 0 direction: 90

Scripts

Costumes

Sounds

when clicked

when key pressed

when Sprite1 clicked

wait 1 secs

forever

repeat 10

broadcast

broadcast and wait

when I receive

forever if

if

if

else

forever

move 10 steps

play drum 48 for 0.2 beats

move -10 steps

play drum 39 for 0.2 beats



x: -547 y: 54

New sprite:



Sprite1



Stage

SCRATCH



File Edit Share Help



Motion

Control

Looks

Sensing

Sound

Operators

Pen

Variables



Sprite1

x: 120 y: -241 direction: 90

Scripts

Costumes

Sounds

man on moon collage



x: 257 y: -386

New sprite:



neil



Sprite1



Stage

when clicked

when space key pressed

when Sprite1 clicked

wait 1 secs

forever

repeat 10

broadcast

broadcast and wait

when I receive

forever if

if

if

else

when clicked

go to x: 120 y: 100

switch to costume lander

forever

change y by -1

when up arrow key pressed

change y by 50

switch to costume thrust

wait 0.3 secs

switch to costume lander

when right arrow key pressed

change x by 10

switch to costume thrust-right

wait 0.3 secs

switch to costume lander

when left arrow key pressed

change x by -10

switch to costume thrust-left

wait 0.3 secs

switch to costume lander

Part 1: Introduction

Part 2: Music

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Part 6: Conclusion

Session 1

What is creative computing?

Process

Design notebook

Resources library

Scratch account

Scratch
Design Notebook

7/27/11 - 7/30/11

C. Johnson

Francois

- Scratch
- Pedagogy

to 4/7 graders
- understand more of
"deep" programming concepts
behind Scratch.

KEN

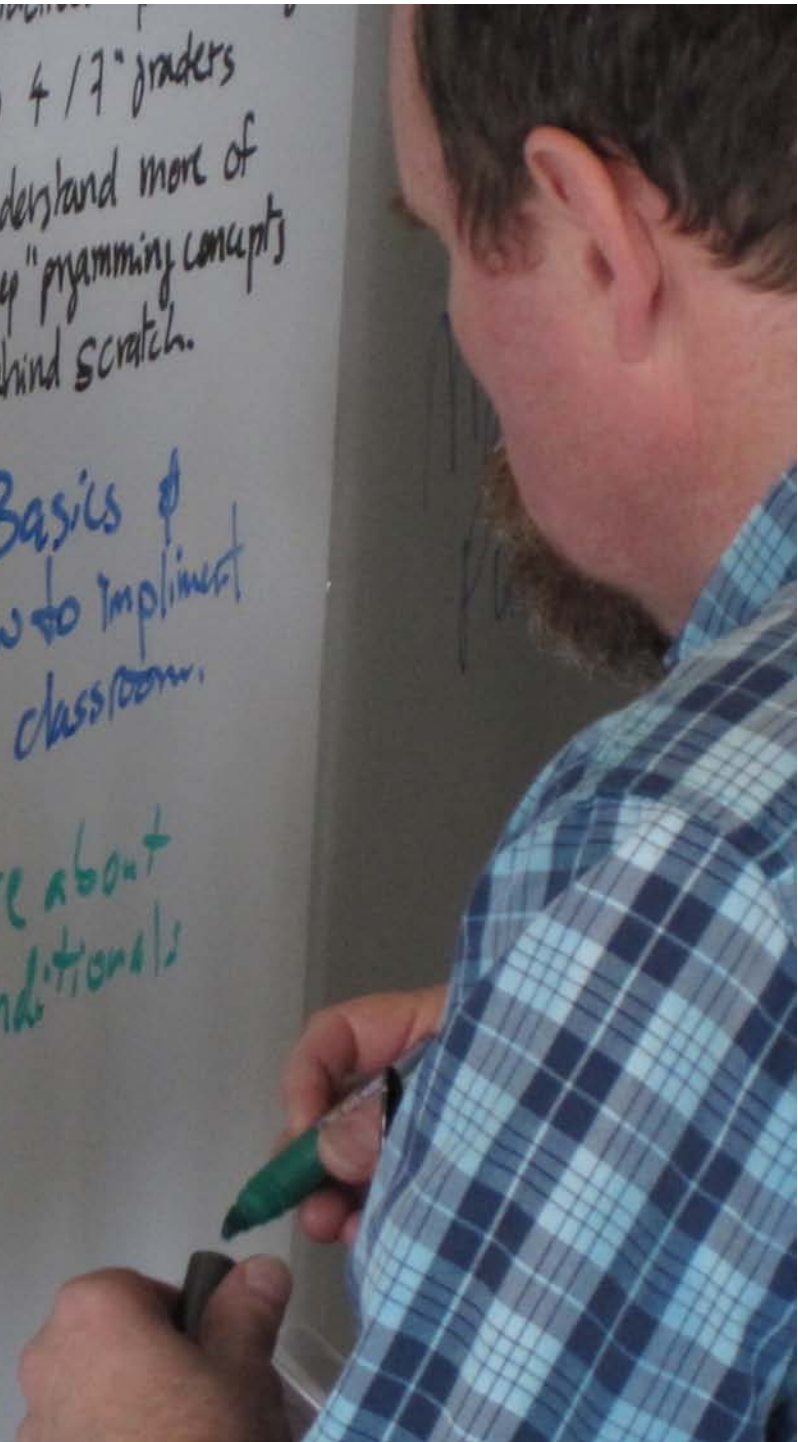
I can start
the program.

Basis of
How to implement
in classroom.

Basics +

More about
Conditionals

Bruce





imagine • program • share

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search

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

Check out the 1,983,019 projects from around the world!



To create your own projects:

Download Scratch

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

Featured Projects

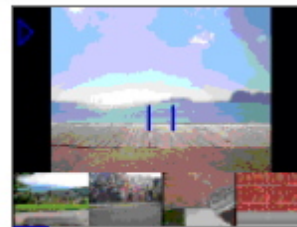
See more



OneWay Circuit 4 by illusionist



Circles of Doom! by bob6



slideshow v4 [1... by gadgetman

Collab Camp



Collaborate with other Scratchers at Collab Camp to create and share interactive stories.

Learn more

ScratchEd



Do you help people learn Scratch? Join ScratchEd, our new online community for educators.

Find out more

Projects Selected by MKR

Learn more



Scratch Design Studio

Part 1: Introduction

Part 2: Music

Part 3: Stories

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Session 1

What is creative computing?

Process

Design notebook

Resources library

Scratch account

Something surprising

MONKEY BUSINESS

Find the Monkey costume in the Animals costume library, and make something surprising happen to the Monkey.



Part 1: Introduction

Part 2: Music

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Session 1

What is creative computing?

Process

Design notebook

Resources library

Scratch account

Something surprising

Session 2

About me

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

Scripts

mres

x: 148 y: -43 direction: 90

```

when mres clicked
  play sound NECC
  say I came to Washington DC for the NECC conference for 4 s
  play sound favorite
  say Washington DC is one of my favorite cities for 3 secs

when green flag clicked
  say Click on any of the objects for 2 secs
  say To learn about my trip to Washington DC for 2 secs
  
```

```

move 10 steps
turn 15 degrees
turn 15 degrees

point in direction 90
point towards

go to x: 148 y: -43
go to

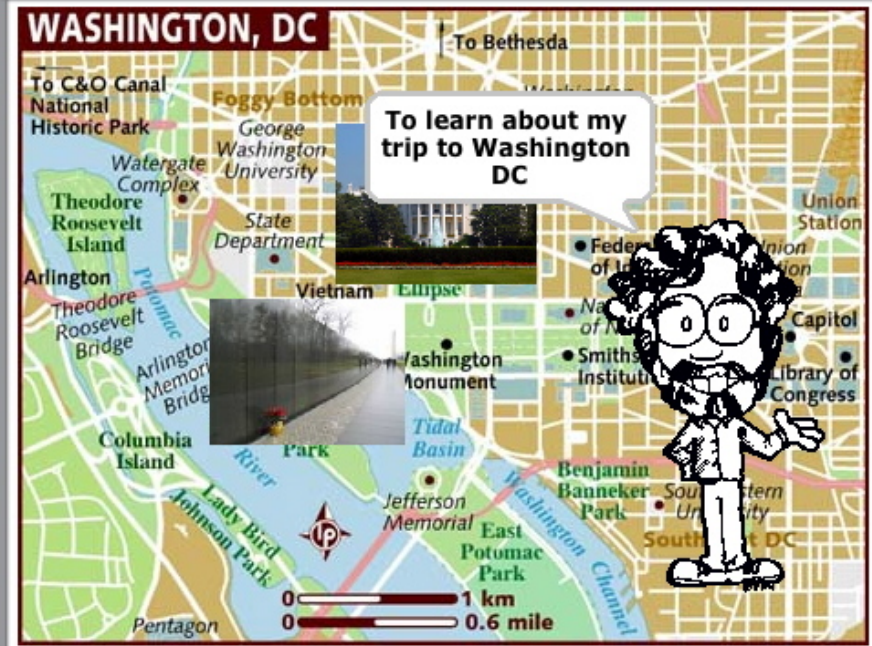
glide 1 secs to x: 148 y: -43

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
  
```

interactive postcard



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

x: 241 y: 190

white h... mres vietnam

Stage

Part 1: Introduction

Part 2: Music

Part 3: Stories

Part 4: Games

Part 5: Project

Part 6: Conclusion

Part 1: Introduction

Part 2: Music

Part 3: Stories

Part 4: Games

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Part 6: Conclusion

Session 3

My favorite song

Programmed to dance...



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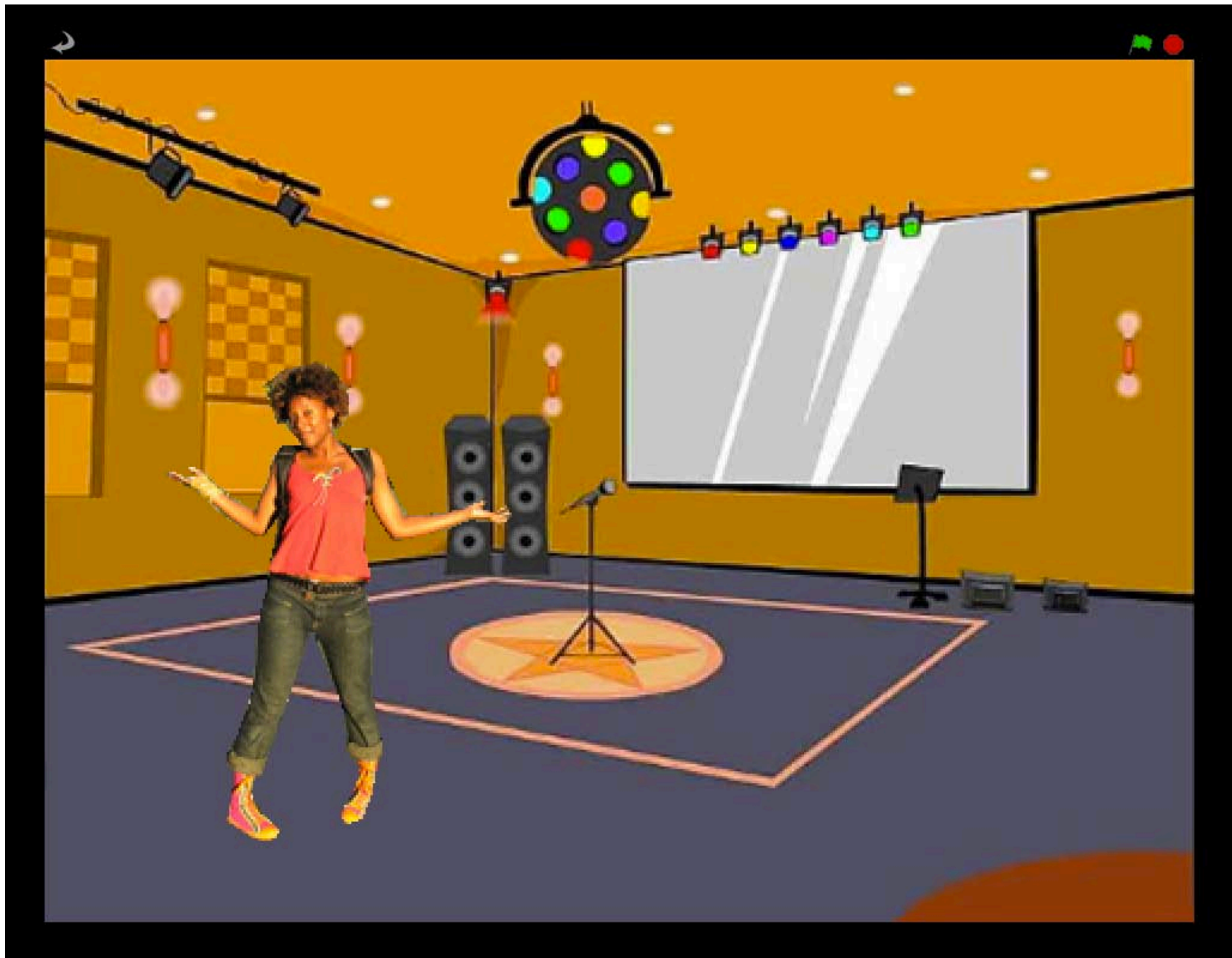
Session 3

My favorite song

Programmed to dance...

Session 4

Dance party



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Session 3

My favorite song

Programmed to dance...

Session 4

Dance party

Session 5

Open-ended designing

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Part 1: Introduction

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Session 6

Six-word stories

Mitch Resnick

Making the world
move like kindergarten

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Session 6

Six-word stories

Performing scripts



Part 1: Introduction

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Session 6

Six-word stories

Performing scripts

Session 7

Creature construction



Part 1: Introduction

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Session 6

Six-word stories

Performing scripts

Session 7

Creature construction

Pass-it-on



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Session 6

Six-word stories

Performing scripts

Session 7

Creature construction

Pass-it-on

Session 8

Open-ended designing

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Part 1: Introduction

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Part 6: Conclusion

Session 9

Debug it



Part 1: Introduction

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Session 9

Debug it

Session 10

Games brainstorm

A-maze-ing

Halo

Sharks & Ladders

Apples to the Apples

Blazing Angels

Monopoly

Animal Forest

Call of Duty

Dangerous Dragons



Part 1: Introduction

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Session 9

Debug it

Session 10

Games brainstorm

A-maze-ing

Session 11

Maze extensions: variables, lists, user input



imagine • program • share

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search

Newest Projects in A-maze-ing

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

Subscribe



Rewards
by karenb*



Levels
by karenb*



Enemies
by karenb*



Timer
by karenb*



Score
by karenb*



Maze
by karenb*



Gallery owner: karenb*



Created: 4 weeks, 1 day ago

Gallery description

A gallery for the 2011 BLC Scratch games workshop.

Part 1: Introduction

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Session 9

Debug it

Session 10

Games brainstorm

A-maze-ing

Session 11

Maze extensions: variables, lists, user input

Session 12

Open-ended designing

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Part 1: Introduction

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Session 13

Project planning

My Independent Project
Idea for what I want to develop

My Independent Project
Idea for what I want to develop

My Independent Project
Idea for what I want to develop

Steps for how I will develop it

Resources that I'll need

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Session 13

Project planning

Session 14

Special-interest groups

3:30

Lego Robotics

Julianne Sarah
Joe Rivka
Gretchen Tanzer
Rich Duncan
Devi Venugopal
Karen

Winter Garden

Assessment (Jennifer)

Deb
Joanne

Cactus

1 to 1 laptop program
stacy

MUSIC uses in Scratch
Nellie Slade

Sally

Paul

lecture hall
6:30

"Advanced" Scratch
commands +
features in
upcoming version
(Larry)

Janet

Elizabeth

Ryan

Maria

5:05
Heaton

4:00

Research

Julianne
Paul

Cactus

PD for Content
Teachers

Janet
Kathie
Ryan

Winter Garden

ADVOCACY
for Scratch
in Elementary
Schools

lecture hall

Vicki Gold
Patrice Gans
Elizabeth
Dave

Pico Board

Gretchen Tanzer

Larry G (?)

Rich

Karen

Heaton

Rock

Using Scratch
to introduce
CS concepts in
Middle School 6th-8th

Winter Garden

Stacy
Devi

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Session 13

Project planning

Session 14

Special-interest groups

Session 15

Open-ended designing

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Project planning

Session 14

Special-interest groups

Session 15

Open-ended designing

Session 16

Critique groups for works-in-progress



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Session 13

Project planning

Session 14

Special-interest groups

Session 15

Open-ended designing

Session 16

Critique groups for works-in-progress

Session 17-19

Open-ended designing

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Part 1: Introduction

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Session 20

Project presentations

Reflections





**Feedback
from
workshop
attendees**

September

**Public
release of
guide
draft**

**Feedback
from pilot
educators
and others**

**Feedback
from
webinar
attendees**

**Revisions
of guide**

**Recruit
pilot
educators**



Thank You!

<http://scratched.media.mit.edu>

<http://scratched.eventbrite.com>

2011-2012 webinar series announced in early September

<http://www.surveymonkey.com/s/2011-08-webinar>