# **STEM Curriculum Resources** by Dr. Wesley Fryer

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# **Challenges**

Resources shared here were initially adapted from the March 2013 Challenges page of the Oklahoma Scratch Camp website.

#### Scratch Website Skills

Today we'll learn on scratch.mit.edu:

- 1. strategies for discovering interesting projects
- 2. creating a gallery of Scratch projects
- 3. downloading and remixing projects
- 4. connecting with other community members

Explore different kinds of Scratch Projects!

- 1. Scratch Jokes
- 2. ART Projects (from ScratchEdTeam)
- 3. STORIES

Projects (from ScratchEdTeam)

- 4. MAZE Projects (from ScratchEdTeam)
- 5. GAMES

Gallery (from ScratchEdTeam)

6. Other SAMPLE

Projects (from ScratchEdTeam)

7. Currently "Featured" Scratch Projects

Also check out these resources:

# 8 Block Scratch Challenge

In 15 minutes, create a cool project in Scratch using just these 8 blocks.

(This activity is included as page 16 in the Scratch Workshop Design Guide)

## **Explore Games**

To see what's possible with game design in Scratch, check out these examples:

- 1. Ten Levels
- 2. Alien of My Own

These were included in Karen Brennan's ScratchED post, "BLC Pre-Conference Workshop: Let's Play! Game Design with Scratch - Monday, July 15, 2012"

- 1. MAZE Projects (from ScratchEdTeam)
- 2. GAMES Gallery (from ScratchEdTeam)
- 3. Top "Loved" Scratch Games

1. Collab Camp: http://info.scratch.mit.edu/collabcMaze Game Project

2. Support

page: http://info.scratch.mit.edu/SupportCreate your own MAZE Scratch game!

3. FAQ

4. Scratch

Forums: http://scratch.mit.edu/forums/

(From "Exploring the Scratch Website: October 2011 Webinar")

Cat Dance Steps Project

1. Check out this sample MAZE game for page: http://info.scratch.mit.edu/Support/Scratchessand helpful blocks to use.

> 2. This handout has helpful tips and instructions for creating a MAZE game! This tutorial explains how to start a new level also!

These links were included in Karen Brennan's "Let's Play" post on ScratchED.

- 5. <u>Presentation</u> <u>Handouts</u>
- 6. Blog

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View All

- palette to the scripting area. Every time you click on the block the cat
  - These blocks (PDF) are very helpful for creating games in Scratch. Use these blocks to create your own simple game.

# Collide or Guess Game Project

- 1. Collide (PDF) sample project
- 2. Guess (PDF) sample project

### **Enhance Your Game**

Here are some sample projects to enhance a Scratch game (including MAZE games):

- 1. adding score
- 2. adding timer
- 3. adding enemies
- 4. adding rewards
- 5. adding more levels

These were included in <u>Karen Brennan</u>'s ScratchED post, "<u>BLC Pre-Conference</u> <u>Workshop: Let's Play! Game Design with Scratch - Monday, July 15, 2012</u>"

this stack of two blocks, the cat will move and then play the drum sound.

3. Copy this stack of blocks (either using the Duplicate toolbar item or by rightclicking the stack and selecting "duplicate") and snap the copy to the alreadyplaced blocks. Change the second "move" block to -10 steps, so the cat moves backward. Every time the stack of four blocks is clicked, the

cat does a little dance forward and

back.

1. Start by dragging out the "move 10

moves a distance of 10. You can

change the number to make the cat

move a greater or smaller distance.

2. From the "Sound" palette, drag out

the "play drum" block. Click on the

block to hear its drum sound. Drag

and snap the "play drum" block below

the "move" block. When you click on

steps" block from the "Motion" blocks

4. Go to the "Control" blocks palette and grab the "repeat" block. Wrap the "repeat" block around the other blocks in the scripting area. Now when you click on the stack, the cat dances forward and back 10 times. o Finally, drag the "when Sprite clicked" block and snap it to the top of the stack. Click on the cat (instead of the blocks stack) to make the cat dance.

(From pages 15-16 of <u>Karen Brennan</u>'s "<u>Curriculum Guide for Creative Computing</u> <u>with Scratch</u>")

## Sprite Surprise Project

Create a project in which something surprising happens to a sprite. Try this script:



## About Me Project

For your third Scratch Project we'd like you to make an ABOUT ME project.

- 1. Check out some of these examples.
- Refer to the "Interactive Us" activity (included as page 17 of the Scratch Workshop Design Guide)

## Tell a Story Projects

Check out this <u>Gallery of Scratch Storytelling</u>
<u>Projects</u>. <u>These Scratch Blocks</u> are helpful when creating stories.

Create your own Scratch story using one of the following models:

- 1. Narrated Slideshow (with audio)
  - Example
- 2. Conversation (with text bubbles)
  - Example
- 3. Catlibs (with user input) Example
- 4. Scenes (slides with text bubbles)
  - Example

(These PDF files above are from Karen Brennan's <u>"Story Time" Handouts on ScratchED.</u>)

## Pass It On Story Project

First 15 minutes: Start a Scratch story using one of the storytelling models above.

Second 15 minutes: Switch computers and continue working / adding to a Scratch story started by one of your classmates.

(This project idea was copied from the <u>July</u> 15, 2012, Pre-BLC Scratch Workshop at <u>MIT</u>.)

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