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Short Scratch Programming Challenges

Contributed by [ScratchEd Team](#), January 28, 2011

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Building programming capacities through coding mini-challenges

Original Author: Mitch Resnick**Education Level:** Preschool and Kindergarten, Elementary School, Middle School, High School, College and University, Professional Development, Other**Content Types:** Activity, Audio and Video, Handout**Curricular Areas:** Computer Science, Technology**Keywords:** [CS4HS](#), [intermediate](#), [video](#), [Creative Computing](#), [challenges](#)

At a recent workshop, [Mitch Resnick](#) and John Maloney led a session called "Diving Deeper", in which participants explored several coding challenges that focused on the interactivity of Scratch projects.

For each challenge, Mitch described the challenge, passed out slips of paper with the challenge printed on it, gave people a fixed amount of time to work on it (collaboration with a neighbor was encouraged), and then led a group discussion about the different approaches people took to addressing the challenge.

Twelve challenges were prepared (and are available as a Word document, below):

- Whenever you press the B key, the sprite gets a little bigger. Whenever you press the S key, the sprite gets a little smaller.
- Whenever the sprite hears a loud sound, it changes color.
- Whenever the sprite is in the top 25% of the screen, it says "I like it up here."
- When the sprite touches something blue, it plays a high note. When the sprite touches something red, it plays a low note.
- Whenever two sprites collide, one of them says: "Excuse me."
- Whenever the cat sprite gets near the dog sprite, the cat turns and runs away from the dog.
- Whenever you click on the background, a flower appears at that spot.
- Whenever you click on a sprite, all other sprites do a dance.
- When the score reaches 10, the scene (background) changes.
- The sprite falls as if controlled by gravity, but stops when hits the green ground.
- The sprite follows the mouse-pointer, but it never gets too close to the mouse-pointer.
- The sprite follows a red line.

The following video demonstrates the activity in action:

Related Resources

[Scratch Educator Guide \(Japanese version\)](#) for other All Activity cards.

Those PDFs are the educator guide for reference when doing one hour workshop of Scratch Activity cards.

[ScratchEd Summer Series: Get Started with Creative Computing!](#)

Excited to learn about Creative Computing with Scratch? This summer, we invite you to dive into Creative Computing with this collection of getting started resources!

[Scratch Cards in Arabic - Story Cards](#) (بطاقات سكراتش باللغة العربية - بطاقات أنشئ قصة)

Are you interested in teaching coding to Arabic speaking kids? If yes, then you should look at these cards. هل انت مهتم بتعليم الأطفال البرمجة؟ اذا يجب ان تطلع على هذه البطاقات

Related Stories

[Advice from Scratch Educators: Share to Learn](#)

Educator Shelly H. speaks of the value of sharing as a learning practice: "I like to have a sharing session at the end of every couple classes so [the students] get ideas from each other."

[Advice from Scratch Educators: Go In and Play!](#)

Educator Ginny B of Maine reminds educators to get in touch with their playful side.

[Teacher-to-Teacher: You Don't Have To Be An Expert...](#)

Rick Bush, an Educator from Portland, OR reminds fellow educators: You don't have to be an expert to teach with Scratch...

Bookmarked By



Lindsay Allen
Texas, United States

Resource Files

Other Files:

 [Diving Deeper challenges.doc](#)

Comments



Chalk Marrow
Member
February 24, 2011

Karen:

Sounds like this could grow to be something like a Scratch version of Project Euler:

<http://projecteuler.net/>

- Dan



Karen Brennan
Member
February 24, 2011

I haven't seen Project Euler before -- thanks for sharing!



Bea Cantor
Member
February 05, 2011

This is great! I will try to replicate it in the Moodle course I'm creating for students to work at their own pace. Thanks for sharing.



Wojciech Domalewski
Poland



Laurie Deschenes
Connecticut, United States



Lesley Sampson
New Zealand



Julie Anne Hopp



Mike Renne



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Kentucky, United States



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