Starting an After School Coding Program

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What's the plan?

- Our district's coding story
- How might we get started with . . .
- Logistics and resources
- Let's talk

How to reach the resources

- www.JaredOLeary.com
  - Presentations
  - Starting an After School Coding Program

Our district's coding story

Why coding?

Photo by Cindy Hanser

How did we get started?

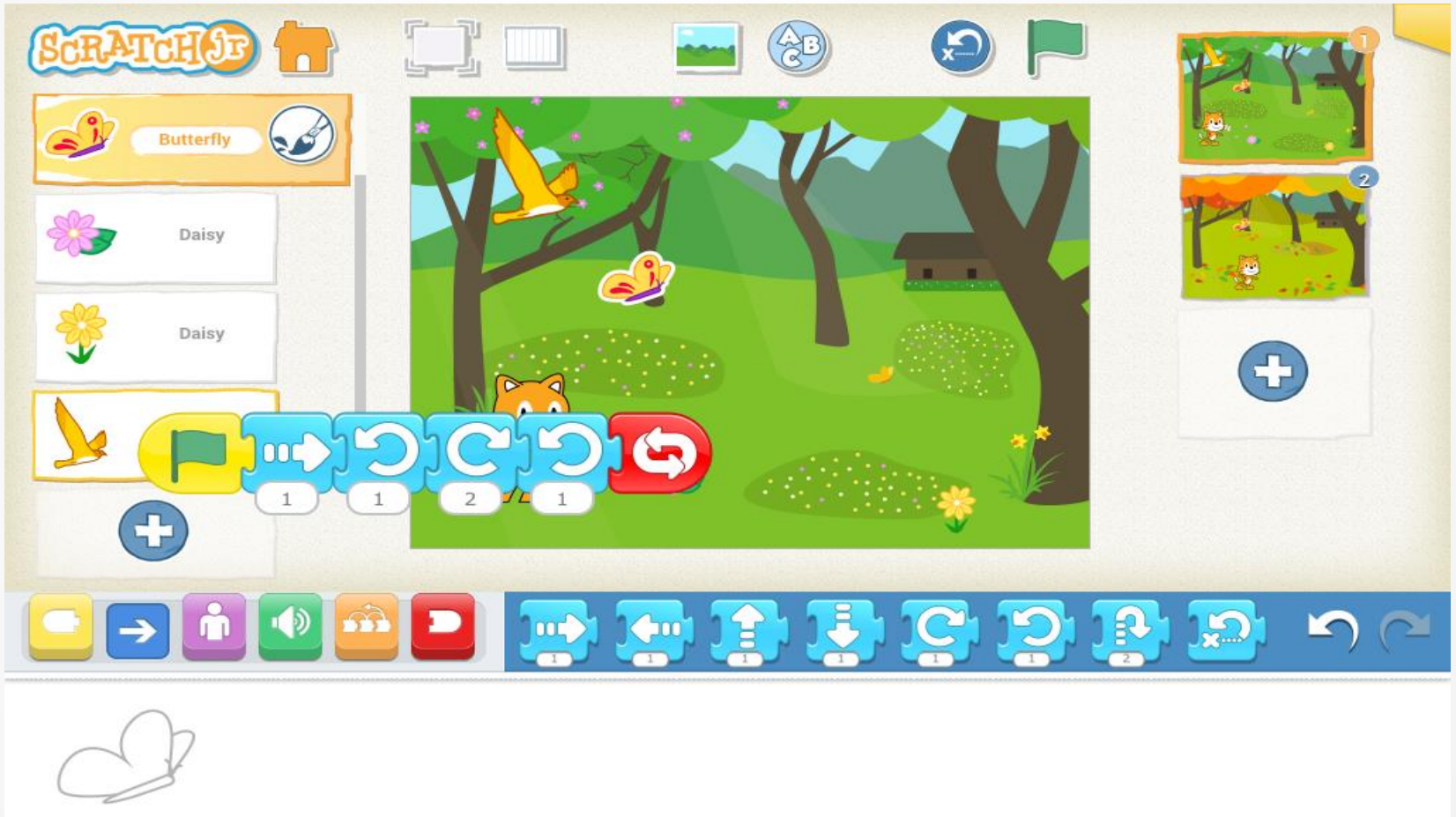
Photo by Cindy Hanser

How have we supported coding?

Photo by Cindy Hanser

How might we get started with . . . Scratch Jr.?

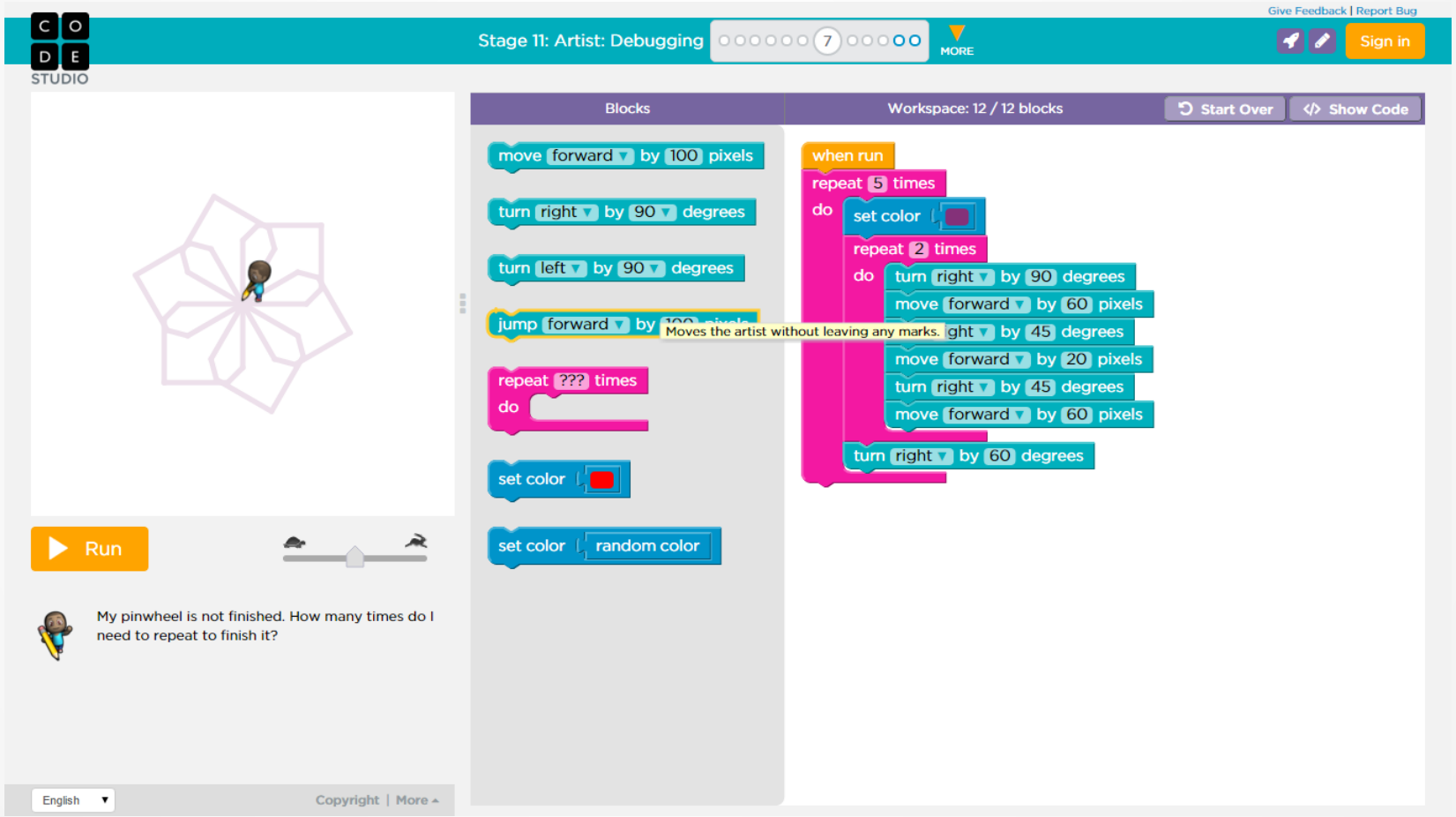
Coding through blocks



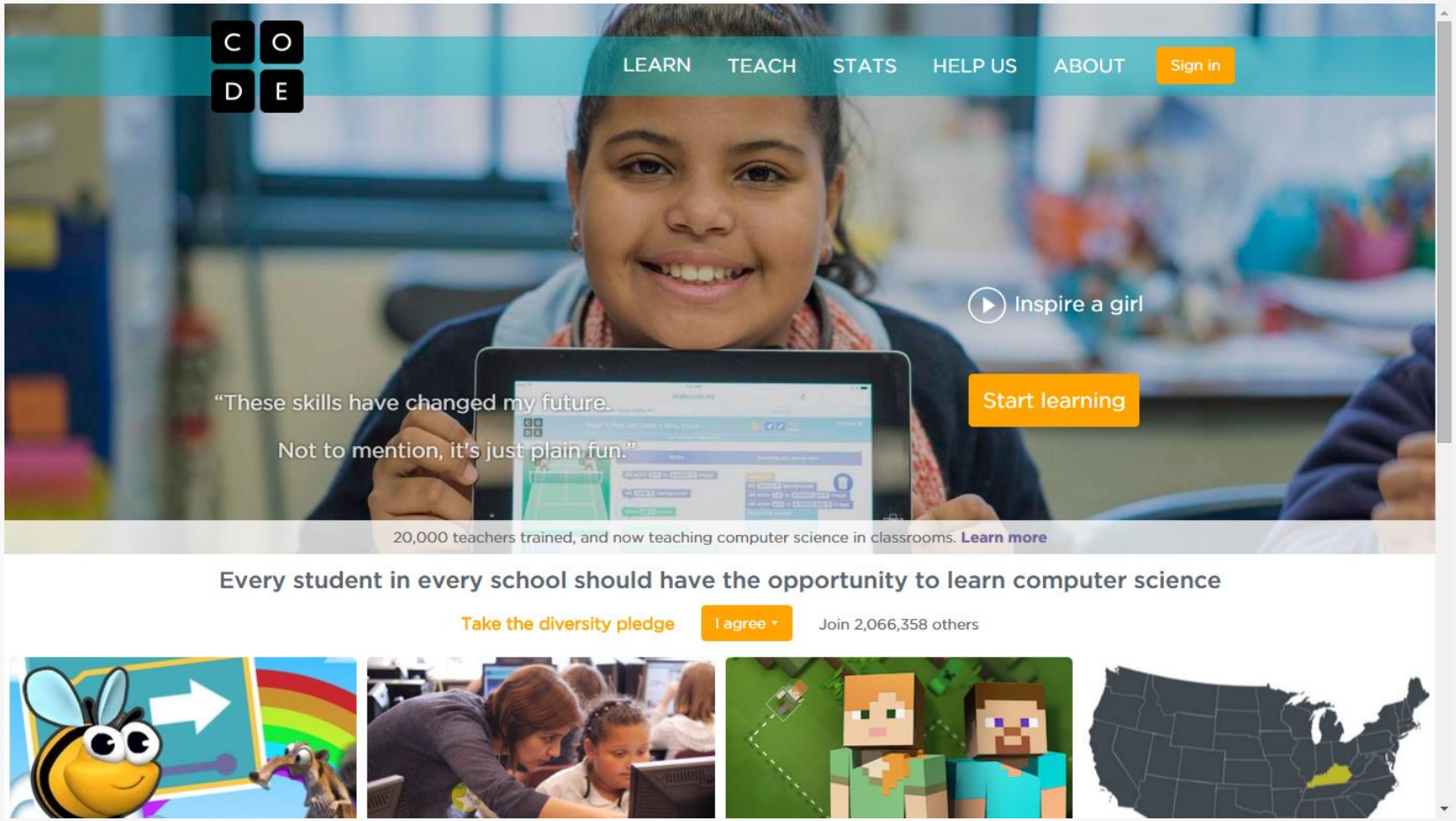
Using an iPad, click the Scratch Jr. icon

How might we get started with . . . Code.org?

Coding through puzzles



Using any device, visit studio.code.org



How might we get started with . . . Scratch?

Coding through projects

Quarterly Project Options:

1. Amazing Mazes
    a. Step one - Starter Maze
        i. Remix this project and change the code of the ball sprite to navigate it through the maze.
        ii. Use only the three kinds of motion blocks in a sequence to get the ball to the X.
    b. Step two - Loopy Maze
        i. Remix this project and change the code of the cat sprite to navigate him through the maze.
        ii. Use only the three kinds of motion blocks and one repeat block to get him to the X.
    c. Step three - Advanced Maze
        i. Remix this project and change the code of the cat sprite to navigate him through the maze.
        ii. Use only the three kinds of motion blocks in a sequence to get him to the X.
    d. Step four - More Amazing Mazes
        i. Pick another project from this studio and remix it to make it do something new

2. What can you create? v3
    a. Using any combination and number of these blocks, what can you create?
    b. Create a spinoff of the project above using only the blocks inside the project.

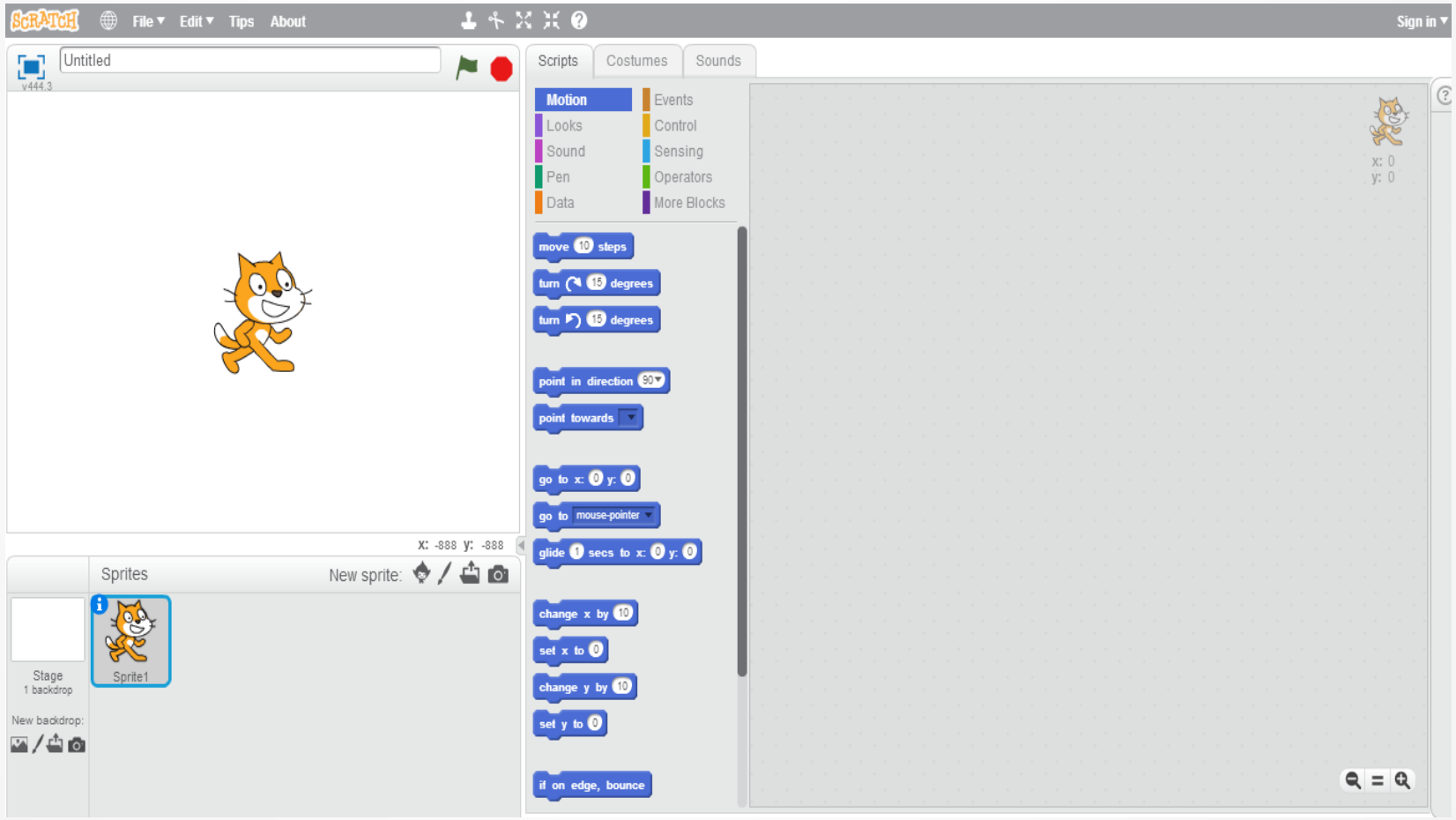
3. Pong starter project
    a. How could you remix this game to do something different?
    b. Use this studio to learn some tips and tricks for making games

4. Remix or create your own school appropriate project
    a. Think about what kind of project you want to remix or create and what you hope to learn while working on it.
    b. Once you have an idea of what you want to remix or create, talk with me about what you want to do and whether or not that's an ok project to work on this quarter

Project questions to think about if you're not sure what to make

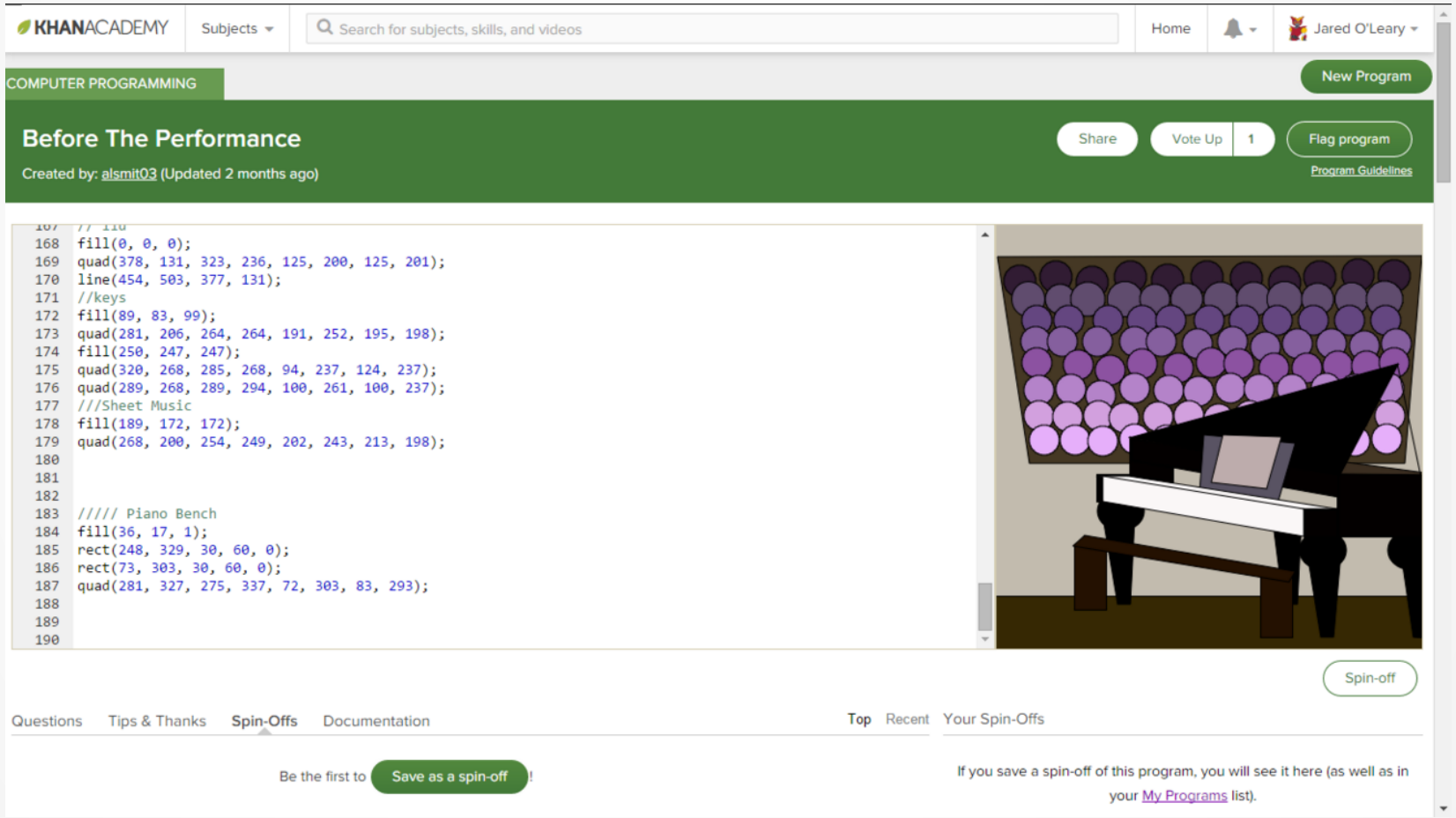
- Can you create a school appropriate project that . . .
    - . . . helps someone?
    - . . . is scary, funny, exciting, boring, musical, silly, relaxing, or colorful?
    - . . . solves a problem you see in the world?

Using a Chromebook or laptop, visit scratch.mit.edu/create

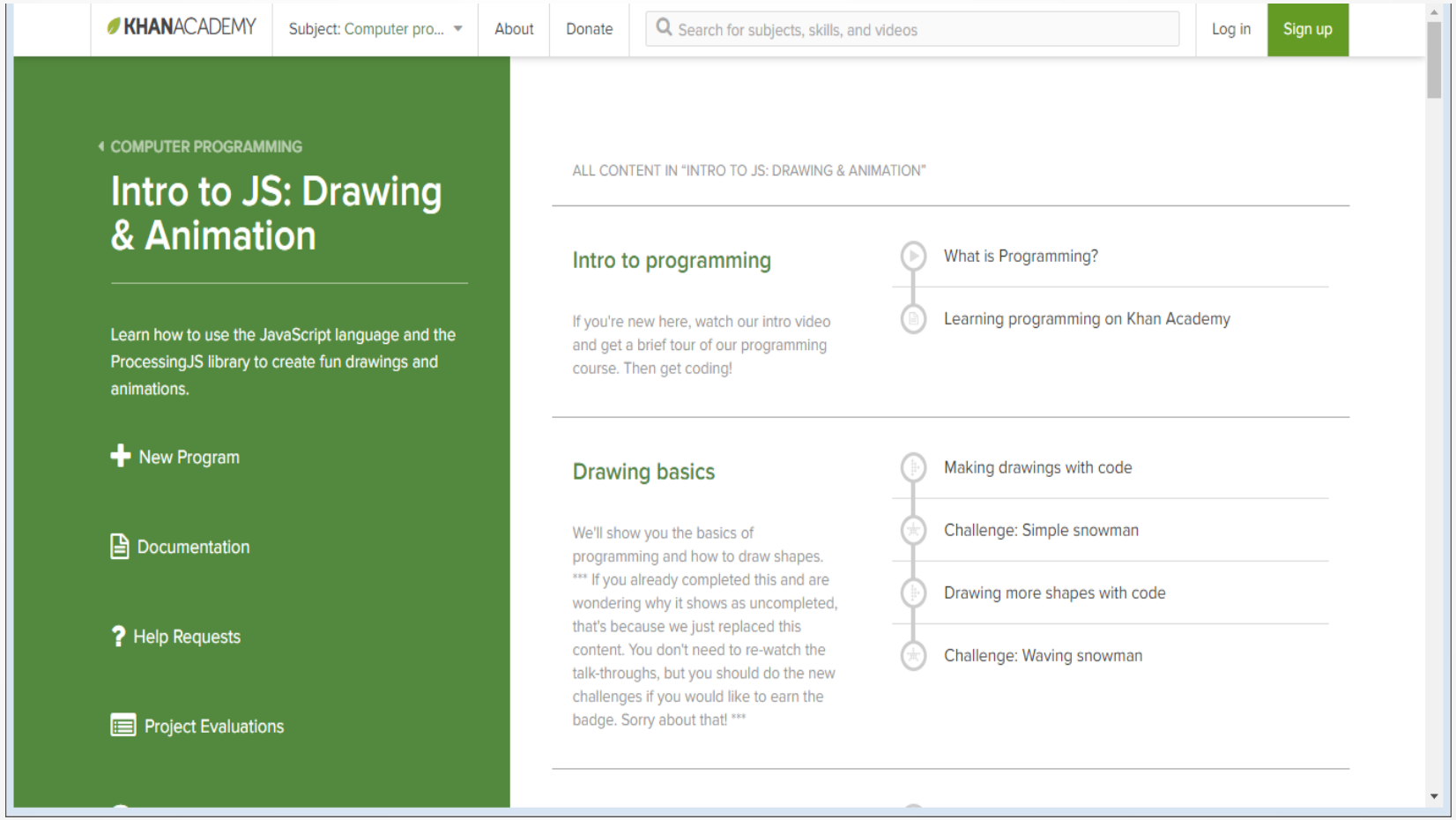


How might we get started with . . . Khan Academy?

Coding through text

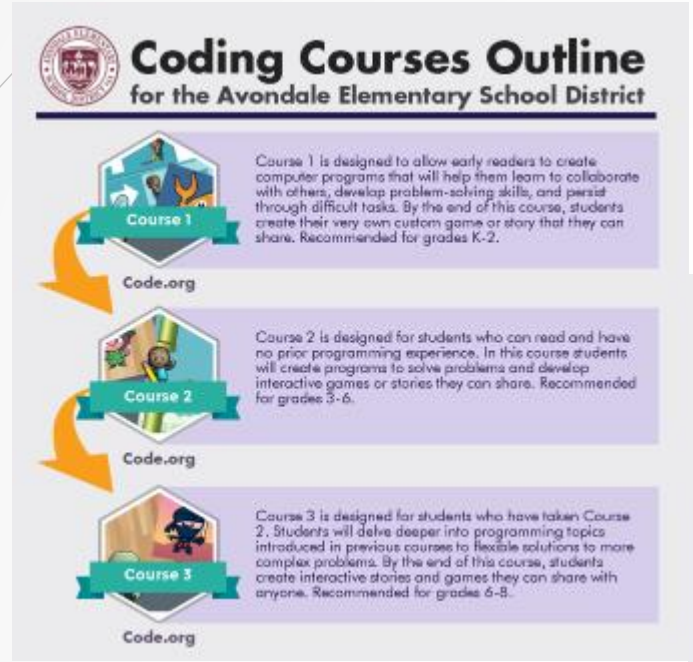


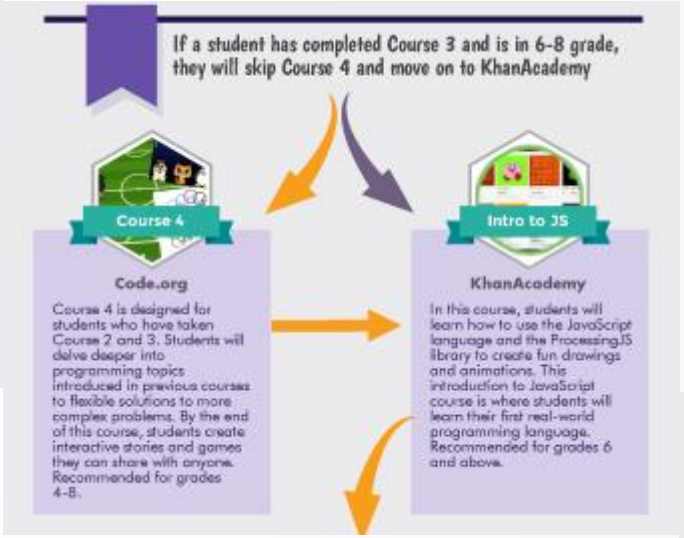
When you have the time . . .



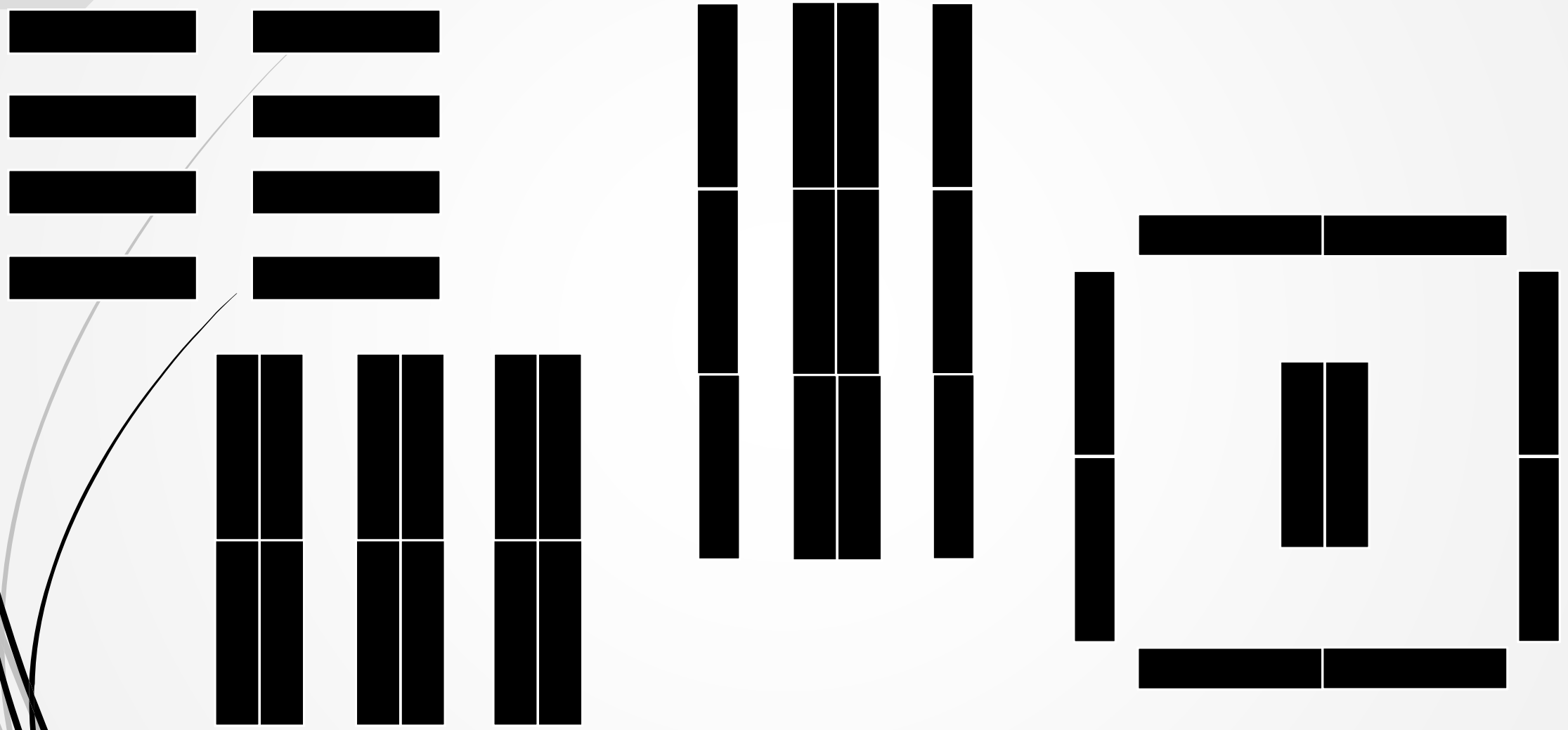
Logistics and resources

How might platforms work together?

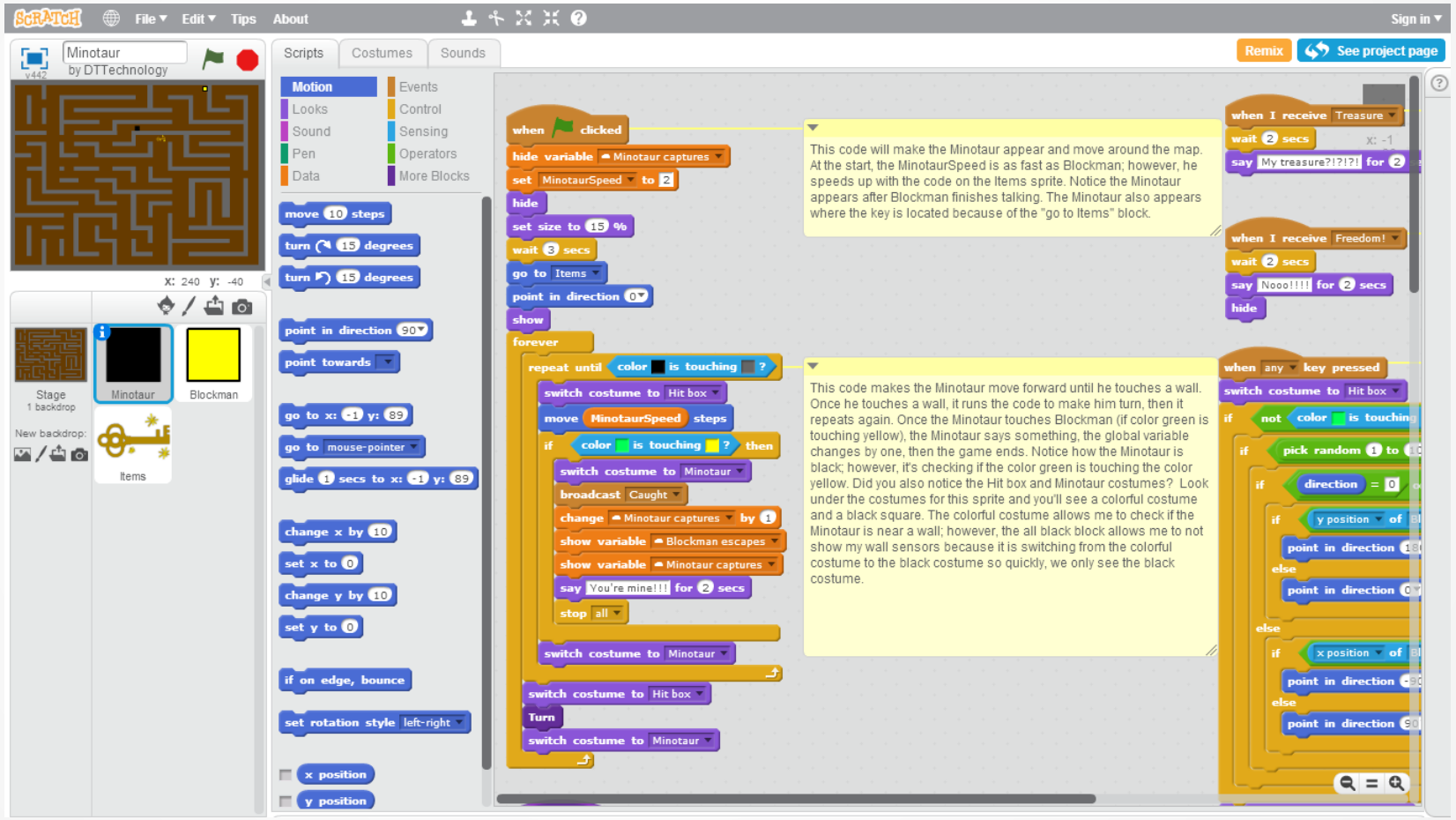




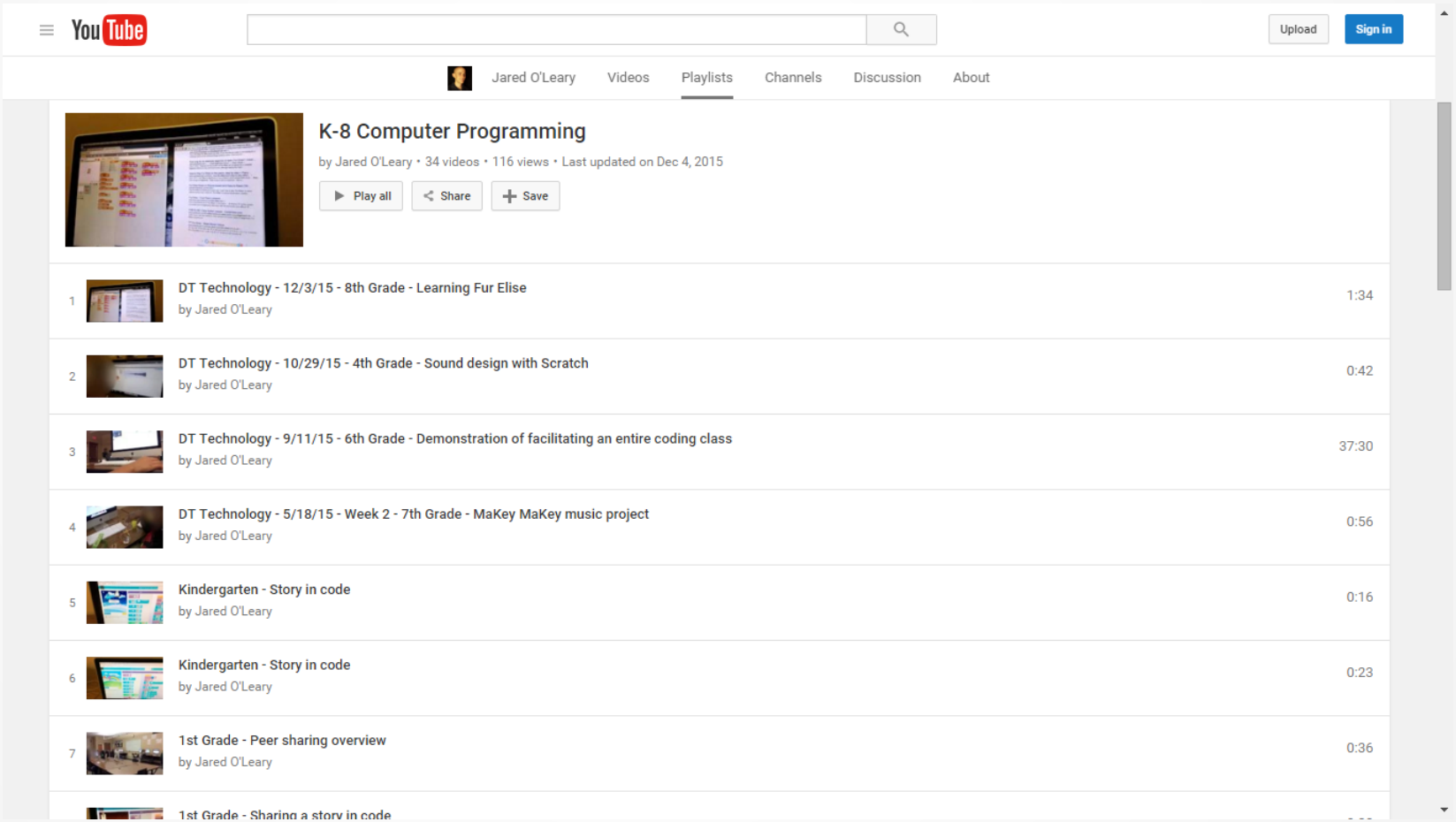
What do our labs look like?



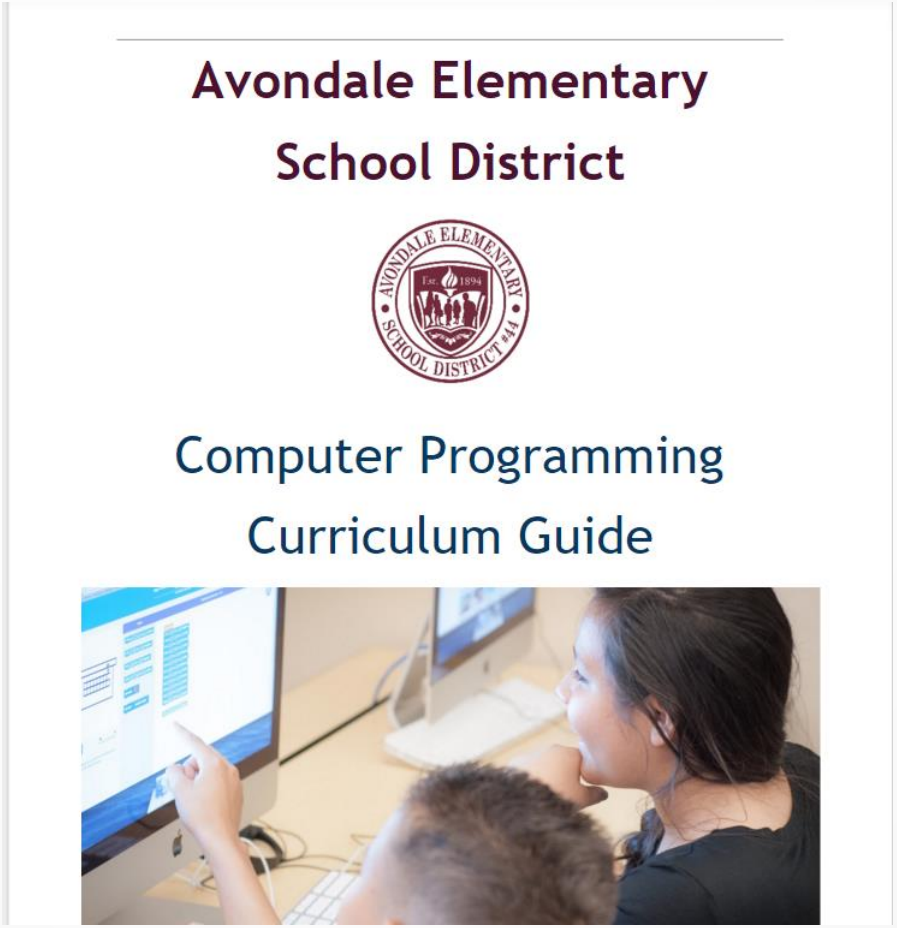
How might we facilitate these classes?



What might a class look like?



Are there curricular resources?



Code.org resources

Elementary school

Teachers say our five elementary courses are "totally awesome sauce" and fun for all students, even pre-readers.

Learn more

Middle school

Our middle school offerings include modules to integrate CS into Algebra and Science. We are working on a new course to release in 2017.

Learn more

High school

We offer two year-long courses for high school: an intro course and an AP course. Both are designed to broaden participation in CS.

Learn more

Additional Resources

Hour of Code

Celebrated in December, but available year-round, the Hour of Code is the

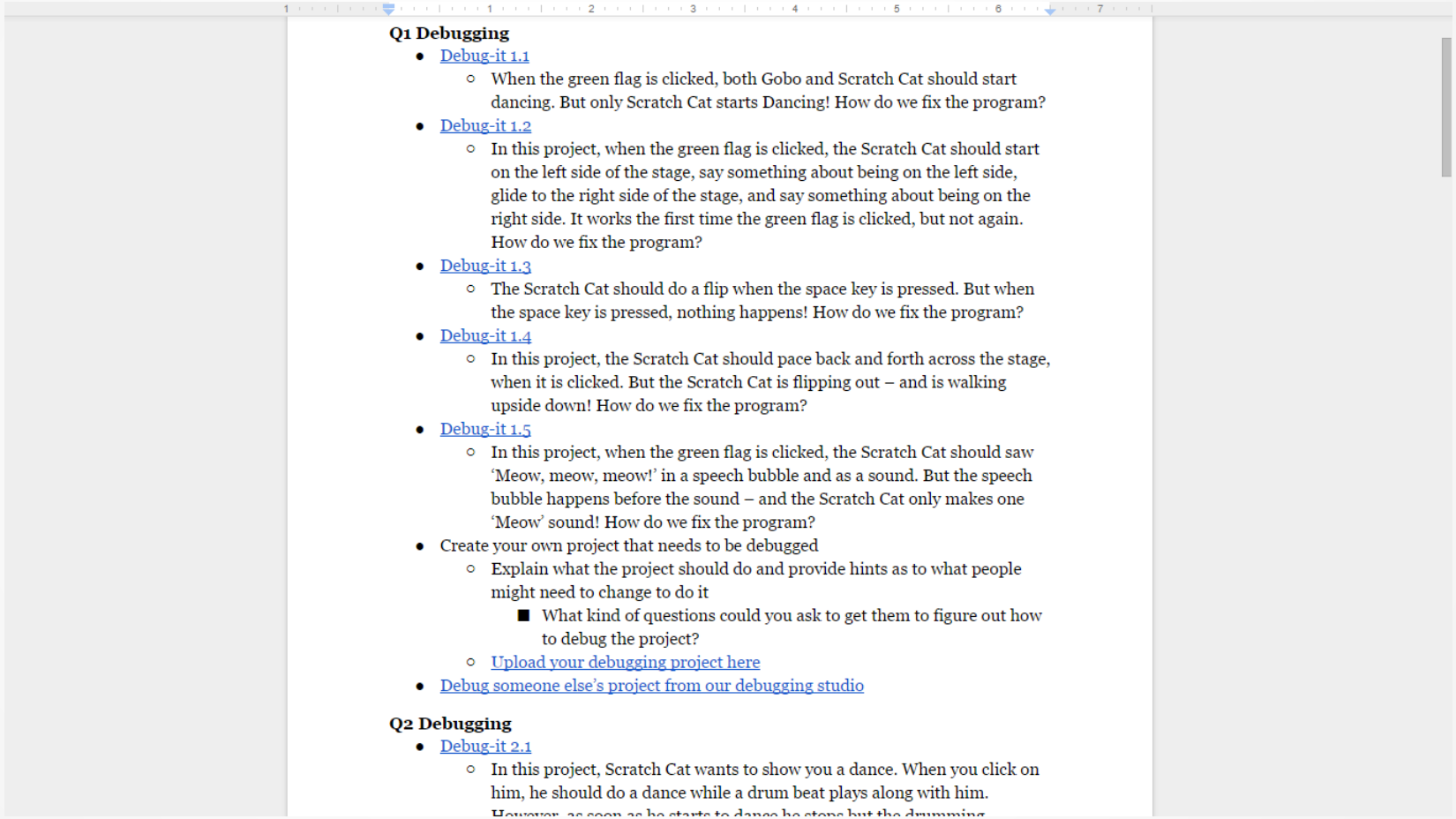
Partner with us

Bring computer science to your country, state, region or school

Beyond Code.org

There are many fantastic courses and organizations helping schools adopt

Scratch and Scratch Jr. resources



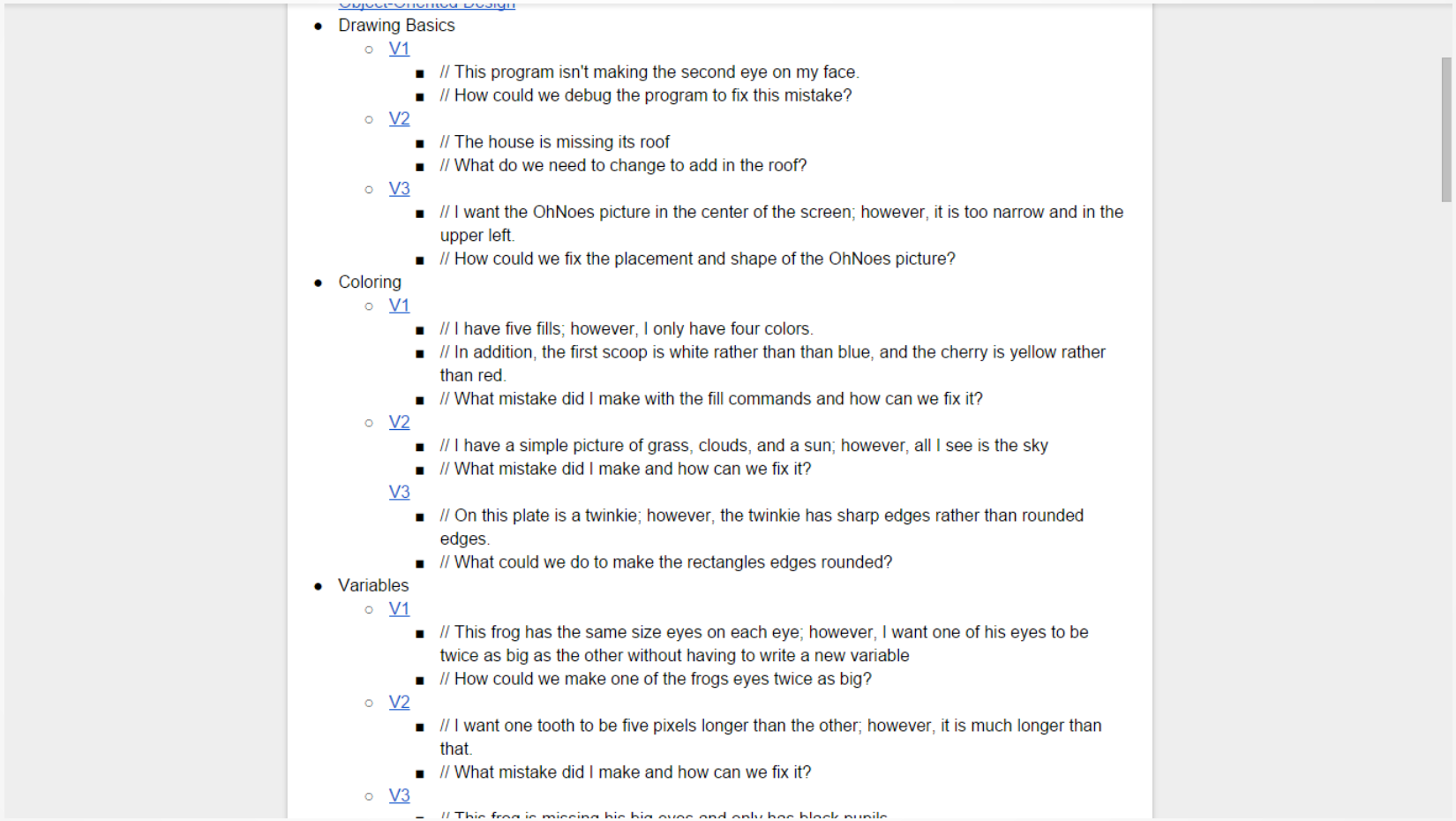
Q1 Debugging

- Debug-it 1.1
  - When the green flag is clicked, both Gobo and Scratch Cat should start dancing. But only Scratch Cat starts Dancing! How do we fix the program?
- Debug-it 1.2
  - In this project, when the green flag is clicked, the Scratch Cat should start on the left side of the stage, say something about being on the left side, glide to the right side of the stage, and say something about being on the right side. It works the first time the green flag is clicked, but not again. How do we fix the program?
- Debug-it 1.3
  - The Scratch Cat should do a flip when the space key is pressed. But when the space key is pressed, nothing happens! How do we fix the program?
- Debug-it 1.4
  - In this project, the Scratch Cat should pace back and forth across the stage, when it is clicked. But the Scratch Cat is flipping out – and is walking upside down! How do we fix the program?
- Debug-it 1.5
  - In this project, when the green flag is clicked, the Scratch Cat should saw 'Meow, meow, meow!' in a speech bubble and as a sound. But the speech bubble happens before the sound – and the Scratch Cat only makes one 'Meow' sound! How do we fix the program?
- Create your own project that needs to be debugged
  - Explain what the project should do and provide hints as to what people might need to change to do it
    - What kind of questions could you ask to get them to figure out how to debug the project?
  - Upload your debugging project here
- Debug someone else's project from our debugging studio

Q2 Debugging

- Debug-it 2.1
  - In this project, Scratch Cat wants to show you a dance. When you click on him, he should do a dance while a drum beat plays along with him. However, as soon as he starts to dance he stops but the drumming

JavaScript resources



- Drawing Basics
  - V1
    - // This program isn't making the second eye on my face.
    - // How could we debug the program to fix this mistake?
  - V2
    - // The house is missing its roof
    - // What do we need to change to add in the roof?
  - V3
    - // I want the OhNoes picture in the center of the screen; however, it is too narrow and in the upper left.
    - // How could we fix the placement and shape of the OhNoes picture?
- Coloring
  - V1
    - // I have five fills; however, I only have four colors.
    - // In addition, the first scoop is white rather than than blue, and the cherry is yellow rather than red.
    - // What mistake did I make with the fill commands and how can we fix it?
  - V2
    - // I have a simple picture of grass, clouds, and a sun; however, all I see is the sky
    - // What mistake did I make and how can we fix it?

  V3
    - // On this plate is a twinkie; however, the twinkie has sharp edges rather than rounded edges.
    - // What could we do to make the rectangles edges rounded?
- Variables
  - V1
    - // This frog has the same size eyes on each eye; however, I want one of his eyes to be twice as big as the other without having to write a new variable
    - // How could we make one of the frogs eyes twice as big?
  - V2
    - // I want one tooth to be five pixels longer than the other; however, it is much longer than that.
    - // What mistake did I make and how can we fix it?
  - V3
    - // This frog is missing his big eyes and only has black pupils

How might I learn how to code?

- Platforms that teach the basics
  - Code.org
  - Codecademy
  - CS First (Scratch)
  - Khan Academy
- Analyze code
  - JavaScript example projects
  - Scratch projects with comments
  - Github
- More resources
  - The coding corner

Let's talk

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