



UC Berkeley EECS

Lecturer SOE  
Dan Garcia

Anyone  
watching  
online?

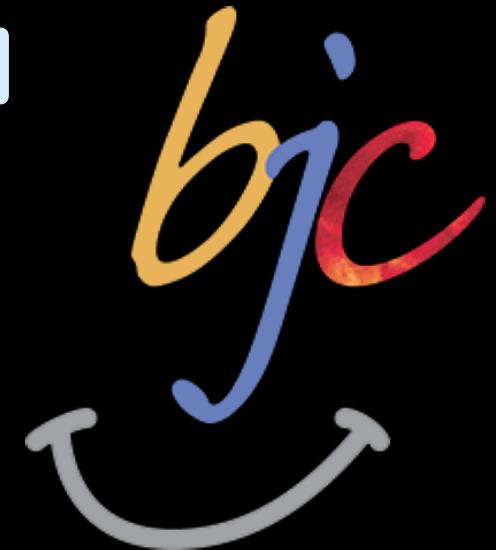
Project spec  
is posted

2012-02-27

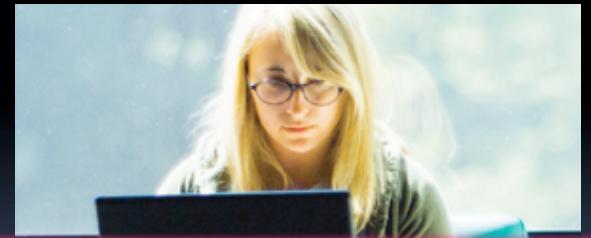
## CS10 CHOSEN AS UC ONLINE PILOT!

CS10 has been chosen as one of 30 courses (all across 10 UC campuses) to receive Pilot funding for online instruction! We'll have 1080p time-indexed videos, "instructor does the class" videos, and mini-quizzes throughout.

Read BYOB project tips!



You have a few chapters of reading during these weeks, don't wait...



Your project partners may be in different sections, try to attend "Project Work" labs together

[onlineeducation.universityofcalifornia.edu](http://onlineeducation.universityofcalifornia.edu)



# Overview

- **META: This course is NOT just about programming!**
  - Lecs + Reading: Big ideas
  - Labs: Programming
  - Disc: Distillation
- **META: plug CS195 Social Implications of Computers**
- **Computers in Education**
  - Most important use?
  - Judah Schwartz' continuum
  - RSA Animate "Changing Education Paradigms"
  - UC Online Pilot





# Peer Instruction (thanks to BH)

The most important use of computers in education so far...

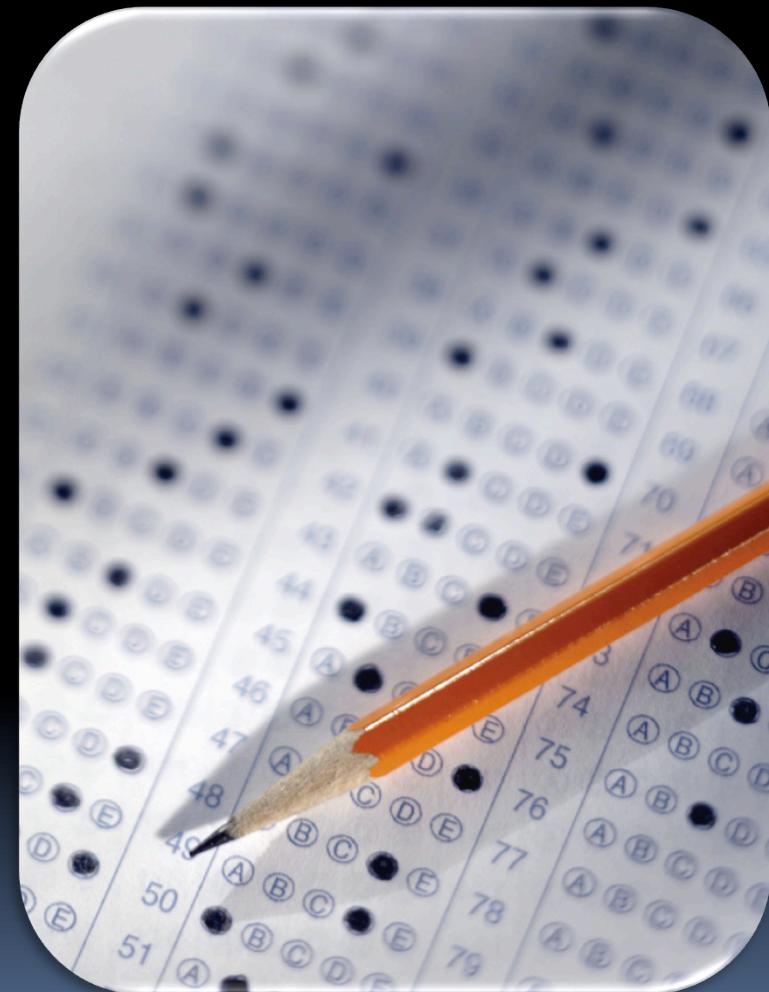
- a) Web search
- b) Arithmetic drill programs
- c) Word processing
- d) iclicker-like technologies
- e) Social networking





# Answer

- *"Multiple choice tests have changed what counts as knowledge in schools. Open-ended questions were the norm 30 years ago. The kind of knowledge you can report on multiple-choice tests is unimportant in the big scheme of things, and what's really important is not what you already know, but how you can take what you already know and apply it something you've never seen before. Multiple choice tests make that hard. Teaching follows tests! The folks who invented Standardized Testing didn't foresee how it would affect what knowledge means! (unintended consequence)" – Brian Harvey*





# Computers in Education (open?)



Judah  
Schwartz

## Tools

Word Processor

Browser

Programming language

## Microworlds

Interactive geometry

Physics simulation

Databases(e.g., atlas)

## Courseware

Arithmetic drill

Computer-assisted instruction

Computer-managed instruction



Myphysicslab demo  
ASSIST movie



UC Berkeley CS10 "The Beauty and Joy of Computing" : Social Implications of Computing I (5)

Garcia, Spring 2012



# RSA Animate : Changing Education Paradigms





groups.ischool.berkeley.edu/onlineeducation/

# UC Berkeley Online Pilot

- Basics of Pilot
  - Blended vs Online
- What should we do?
  - How can CS10 be the course for everyone?
  - How can we use peers?
  - What'd help you most?
- Would you take this course if it'd been offered at another UC?
  - Does f2f matter?



UC Berkeley EECS  
CS10 : The Beauty and Joy of Computing  
Spring 2011



## Overview

CS10, *The Beauty and Joy of Computing*, is an exciting new course offered by the UC Berkeley EECS Dept. Computing has changed the world in profound ways. It has opened up wonderful new ways for people to connect, design, research, play, create, and express themselves. However, just using a computer is only a small part of the picture. The real transformative and empowering experience comes when one learns how to program the computer, to translate ideas into code. This course will teach students how to do exactly that, using **BYOB** (based on **Scratch**), one of the friendliest programming languages ever invented. It's purely graphical, which means programming involves simply dragging blocks around, and building bigger blocks out of smaller blocks.



Our labs are held in the Apple Orchard, which is not only the newest lab on campus with the fastest machines, but also has the most natural light!

But this course is far more than just learning to program. We'll focus on some of the big ideas of computing, and introduce design, recursion, concurrency, simulations, and the limits of computation. We'll show some beautiful applications of computing that have changed the world, talk about the history of computing, and where it will go in the future. Throughout the course, relevance will be emphasized: relevance to the student and to society. As an example, one project will be to create a game for the students' choosing, on a topic most interesting to them. The overarching theme is to expose students to the beauty and joy of computing. This course is designed for computing non-majors, although interested majors are certainly welcome to take the class as well! We are especially excited about bringing computing (through this course) to traditionally under-represented groups in computing, i.e., women and ethnic minorities.

Some context: in Fall of 2009, we piloted a 2-unit version of this course as the freshman/sophomore seminar CS39N: *The Beauty and Joy of Computing* to 20 students. **It was such a success** that we decided to move ahead to make this course our new computing course for non-majors, replacing the venerable CS3; however, we still offer the self-paced course CS35 for those interested in learning to program in Scheme. Last fall (2010) was a 90-person pilot and we're continuing to grow the course as word spreads to more students. We're continually replacing the weakest parts of the curriculum and hope you'll enjoy!



Fall 2009 students pair programming in Scratch.



Student feedback from Fall 2010.

0:00 / 0:00

X Josh Paley of Gunn High School in Palo Alto, CA  
X Eugene Lemon of Ralph Bunche High School in Oakland, CA  
X Ray Pedersen of Albany High School in Albany, CA

Garcia, Spring 2012



UC Berkeley CS10 "The Beauty and Joy of Computing" : Social Implications of Computing I (7)



# Taking CS10 Online

The most effective thing for your learning, if you were taking CS10 online (remotely)...

- a) "Test yourself" mini-quizzes
- b) Mini-programming challenges
- c) Tree-structure interface to lectures
- d) 1080p High-Definition archived lectures
- e) "Instructor takes the class" videos of us doing labs, HW, exams

