Coding 2.0: Current Thinking and New Ideas

Presenters

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Our Goals for Today:

1. Refine your vision

2. Identify compelling strategies
KEY QUESTIONS TO MOVE FROM CODING 1.0 TO 2.0

Are students satisfactorily challenged to demonstrate their ability to:

1. Apply their skills in new situations?
2. Connect ideas to solve a problem?
3. Justify decisions?
4. Produce original work?
Jerry Crisci
Director of Instructional Technology and Innovation
Scarsdale Public Schools, NY
The Scarsdale Design Ecosystem

A Proposed Model

STEAM

Design Thinking

Computational Thinking

Making

Coding

The Humanities:
The Foundation of All Disciplines
“Accessible Programming Environments”
Healthy Choices

You get up in the morning, you rush to get ready for work, you rush out the door without a breakfast. Perhaps you grab a bagel and cream cheese, perhaps a muffin, perhaps an Egg McMuffin. If you’re lucky, you get a pastry, a hearty breakfast of pancakes and sausage and eggs, or an English fry-up.

Unfortunately, when it comes to being healthy, none of these options is a great way to start your day. Several readers asked about healthy breakfast ideas, and in truth, it’s a dilemma that many of us face each day. Either we don’t have time for breakfast, or we don’t have many healthy options. The first problem is a problem, because it means that you start the day with an empty stomach. That means that by the time you are getting into the swing of work, your blood-sugar levels are
button "Make a Choice" of card id 1002 of stack "Untitled 2" – Code Editor (editing)

```
on mouseUp
  Ask "What would you like to eat?"
  if it is "fruit" then answer "Great Choice!"
  If it is "bagel" then answer "Not so good."
end mouseUp
```
Jay Strumwasser
Technology C
penjee = Penguin(1,2, east, 4)
if (penjee.isHole(ahead) ):
    penjee.turn(right);
penjee.waddle(1);
penjee.turn(left);
penjee.waddle(1);
penjee.turn(right);
penjee.waddle(1);
penjee.grabFish();
penjee.waddle(1);
Question 5

codecademy.com (Steven)

Variables

Creating web apps, games, and search engines all involve storing and working with different types of data. They do so using **variables**. A **variable** stores a piece of data, and gives it a specific name.

For example:

```python
spam = 5
```

The variable `spam` now stores the number `5`.
CodeCombat.com (Steven)

# Dungeons of Kithgard

**Goals:** Incomplete

- Avoid the spikes.
- Collect the gem.

**Programming Language:** Python

```python
# Move towards the gem.
# Don't touch the spikes!
# Type your code below and click Run when you're done.

hero.moveRight()

hero.moveDown()
```

**Run**

- hero.moveDown()
- hero.moveLeft()
- hero.moveRight()
- hero.moveUp()
Examples in Every Chapter

This HTML tutorial contains hundreds of HTML examples.

With our online HTML editor, you can edit the HTML, and click on a button to view the result.

Example

```html
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```
Code.org
#tltechlive
Scratch
#tltechlive
CS-First by Google

Opening the Starter Project

Game Design - Racing Game (Activity 2)

Now it's your turn!

1. Click the starter project link next to this video
2. Click Remix, and sign in to Scratch using the information from your CS First passport
3. Return to the CS First tab, and click the green arrow below this video to move on

Theme-Based Clubs

Each CS First club is based on a real-world theme and offers about 10 hours worth of lessons and activities. The different club themes aim to attract and engage students of varying backgrounds and interests. All materials are targeted at students in 4th - 8th grades (or between the ages of 9 - 14) and are free and easy to use.

EXPLORE OUR MATERIALS
Field Trip to Microsoft for Computer Science Week
1. TodaysMeet

Coding

Listen

Talk

Nickname:

Join

By submitting this form you agree to the Privacy Policy and Terms.

2. TodaysMeet

Coding

Listen

Talk

Message:  

Characters remaining: 140

Say
Please navigate to https://todaysmeet.com/Coding and respond to both of these questions

1. What are 1 or 2 things you were looking for when you decided to attend this session?

2. What are 1 or 2 things you found interesting in the stories told by the panelists? Why are they interesting to you?
1. **CodeAcademy :: Free**
   CodeAcademy offers basic introductory tutorials for students in a variety of coding languages including: JavaScript, Java, HML & CSS, jQuery, Python, and Ruby. This site is free for educators and students and is best used at a middle school and high school level. *Recommended by Steven Lahullier*

2. **CodeCombat :: Free and $**
   CodeCombat.com offers game-based coding lessons for students from an elementary level through high school. The site offers games which require basic code input to complete. It uses Python or JavaScript. This resource was selected as a fun way to introduce coding to students. I find it is best used at a middle school level. *Recommended by Steven Lahullier*

3. **CodeMonkey :: $**
   “If GameMaker is a bit too much, CodeMonkey is a nice option for easing into more complex platforms. Like Puzzlets, CodeMonkey uses problem solving to motivate curious kids. Unlike Puzzlets, however, CodeMonkey is entirely digital. CodeMonkey also leaps across the chasm, introducing kids to written scripting using CoffeeScript, a great introductory language that'll help kids learn syntax.” *Recommended by Taylor Higgin*
4. **Cork The Volcano — Puzzlets :: $**

“For many early learners, it can be useful to supplement digital coding and interaction with physical, hands-on activity. Cork the Volcano, an app for the Puzzlets platform, uses a similar, but stripped-down, visual block system like Scratch, and focuses on puzzle solving rather than creation. Kids sequence physical blocks on a game board in front of them that causes things to move and behave in the puzzle game. It can be an effective way to jumpstart interest in programmatic thinking for those kids that love problem solving.” **Recommended by Taylor Higgin**

5. **GameMaker: Studio :: Free & $**

“For Scratch users, GameMaker provides a nice next step. It still has the drag-and-drop elements of Scratch as well as the all-in-one experience of design, art asset creation, and coding, but introduces much more fine-tuned control and incredible depth. GameMaker will level-up along with kids’ sensibilities, allowing them to more fully realize the types of games they envision.” **Recommended by Taylor Higgin**
6. **Google CS First** :: Free
“More curriculum than tool, Google CS First provides instructional support for kids in grades 4-8 to learn actual coding. The key with CS First, though, is that it allows kids to choose from a set of varied interests (everything from fashion to sports to music), and then uses those topics to drive coding projects. There are also grab-and-go resources for educators to start up clubs in their schools or communities.” *Recommended by Taylor Higgin*

7. **Khan Academy** :: Free
Khan Academy offers free videos and lessons for beginning and advanced coding with JavaScript, HTML/CSS, and SQL. This tool could be used for any age, but I would recommend middle through high school. *Recommended by Steven Lahullier*

8. **Scratch** :: Free
“Scratch, as far as learning tools go, is a classic, and for good reason. It distills down the basic core competencies of programming into an easy to use and manipulate visual block system that’s been adopted by numerous other tools. What distinguishes Scratch though is its boundless creative possibilities and healthy community which encourage learners to express themselves and share their work. It’s the perfect option for creative kids.” *Recommended by Taylor Higgin*
9. **Vidcode :: $**
“From Instagram to Snapchat to Facebook, just about every teen uses some kind of social media. Vidcode uses the established grammar of social media — filters, memes, and animation — as an irresistible context for creative JavaScript coding projects that are genuinely fun and relevant to teens. Paid upgrades also add advanced tutorials as well as curriculum and lesson plans educators can use to get whole classes up and running. “
Recommended by *Taylor Higgin*

10. **W3schools.com :: Free**
W3schools.com offers free tutorials and references for HTML, CSS, Javascript, SQL, PHP, Bootstrap, and jQuery. I use this tool to help teach my 8th grade students how to make a website using only HTML coding. *Recommended by Steven Lahullier*

11. **Code.org :: Free**
Code is the first stop in the coding curriculum. With four different games to create, any student will find this engaging. Geared for students from Pre-K through 8th grade, and translated into dozen of languages, it’s perfect for the reluctant educator. *Recommended by Eileen Lennon*
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