Bringing CS to Your District …

A Possible Track of CS Courses

Overview of Session (12:45 - 2:10 PM)

I. Welcome and Introductions (5 minutes)

II. Course overviews (20 minutes each)

- Exploring Computer Science (non AP)
- Computer Science Principles (AP or non AP)
- Computer Science A (AP)

III. Panel (20 minutes)

IV. Professional Development Opportunities

A Possible Track of CS Courses

Exploring Computer Science (non AP)

- Overview of the course
- Who should take this course?
- What might a lesson from this course look like?
- Who can teach this course?
- Where can the resources be found?

ECS Slides

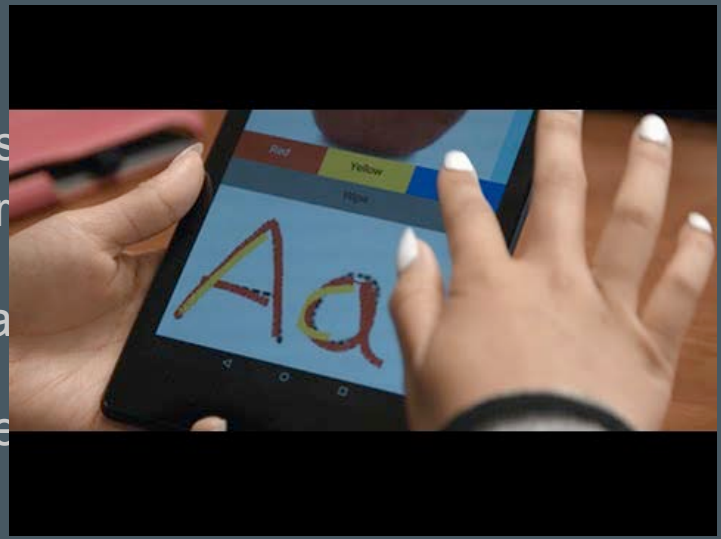
Computer Science Principles (AP or non AP)

- Overview of the course
- What might a lesson from this course look like?
- Where can the resources be found?
- Who should take this course? It’s a bridge between the courses
- Who can teach this course?
- AP vs Non AP perspectives

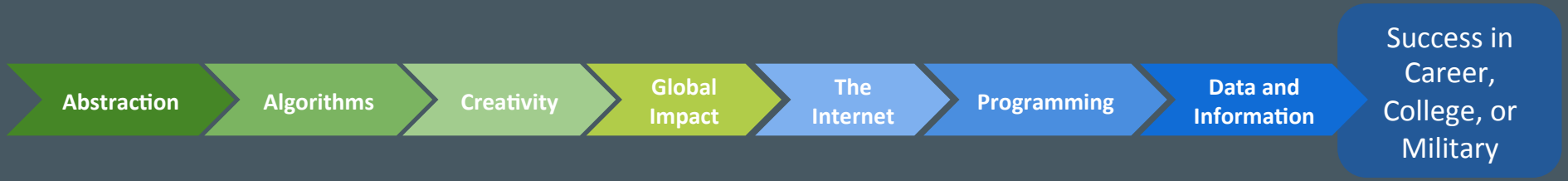
CSP Overview

The AP CS Principles Project (http://apcsprinciples.org/)

- New College Board Advanced Placement cours 2016-2017 - Largest course launch in AP histor
- Broad introduction organized around 7 Big Idea
- Intended to appeal to girls and underrepresente minorities



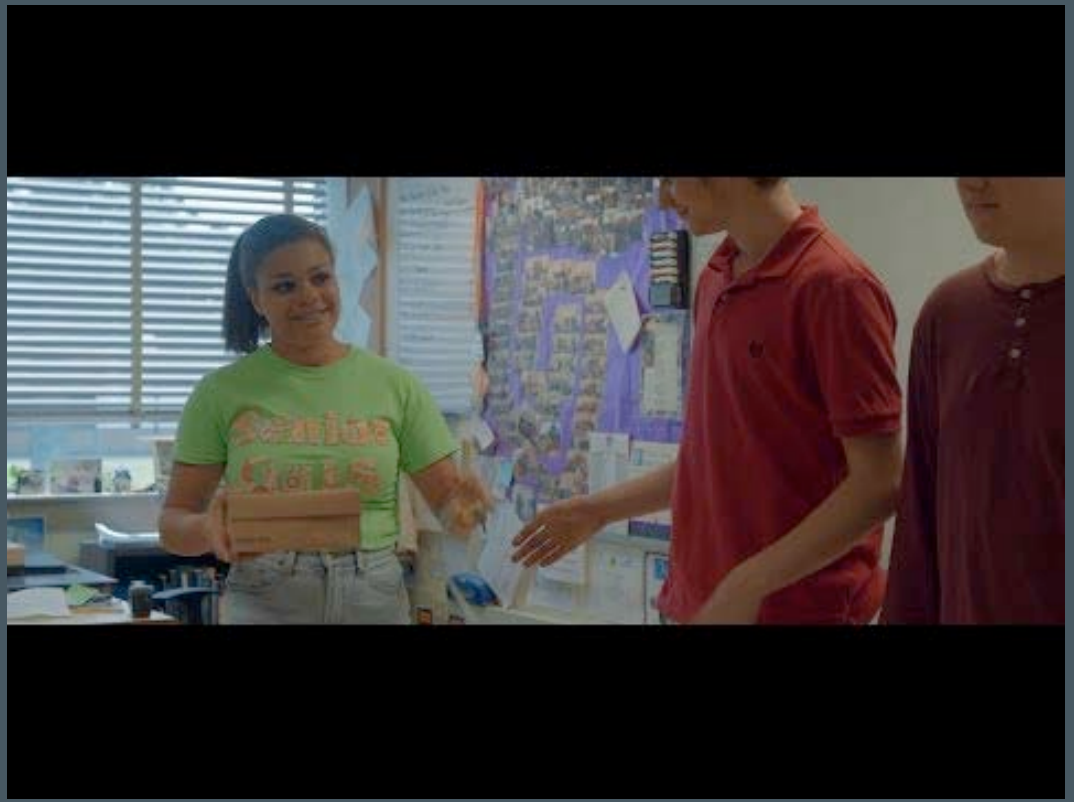
Seven Big Ideas of CSP



CSP Assessments

Explore - Impact of Computing Innovations	16%
Create - Applications from Ideas	24%
AP CSP Exam - Language Neutral, 2 hrs, 74 multiple choice questions	60%

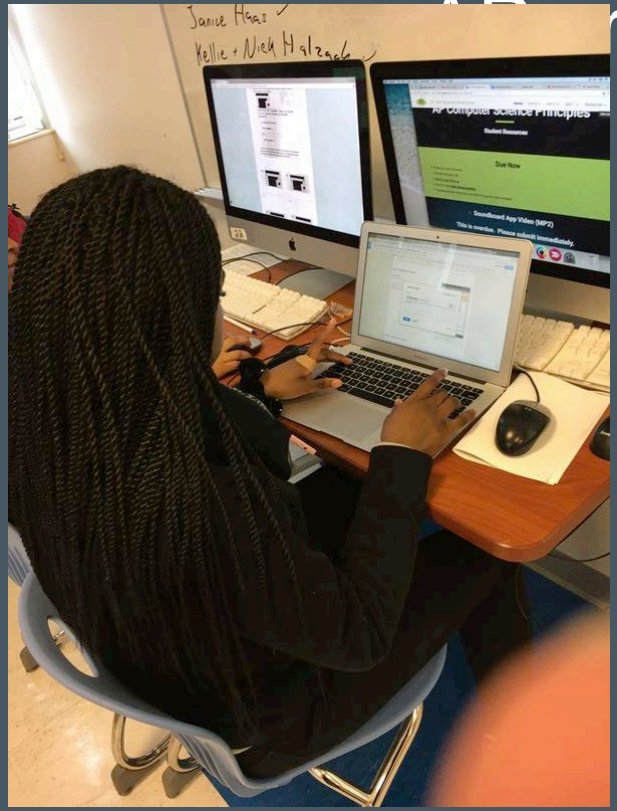
Teach AP CSP

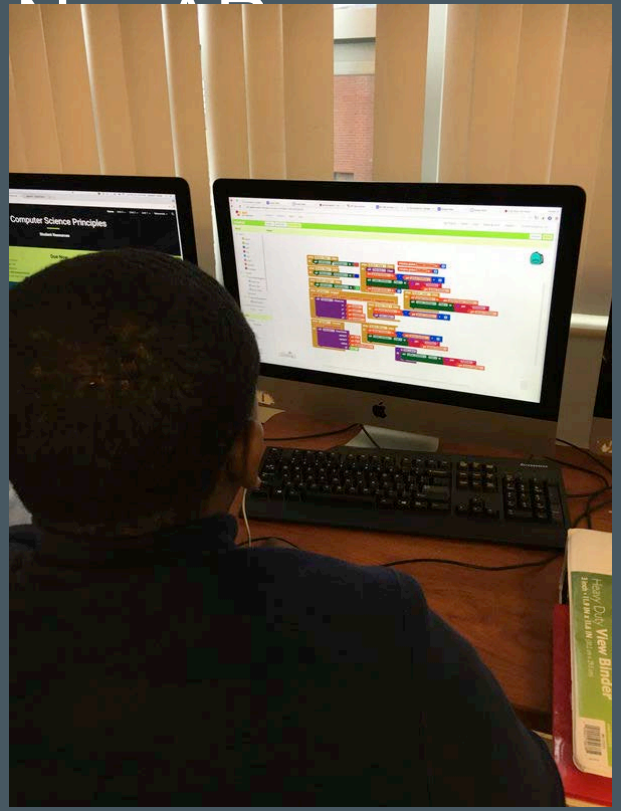


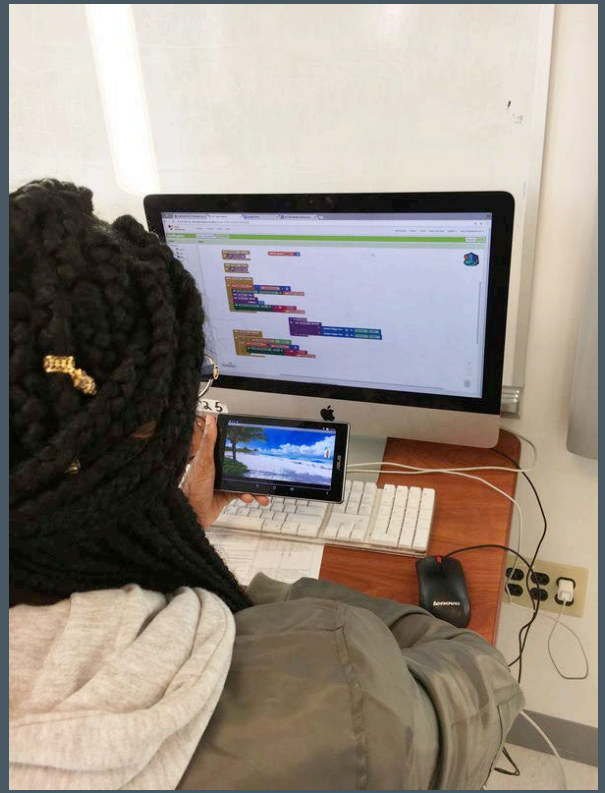
Endorsed Providers

- Beauty and Joy of Computing (BJC) (SNAP)
- **CodeHS (Block based and text based JavaScript)**
- Code.org (App Lab/JavaScript)
- Computer Science (CS) Matters (Python)
- CS50 (Scratch/C)
- **Mobile CSP (App Inventor)**
- Project Lead the Way (PLTW) (Python/App Inventor)
- **UTeach CS Principles (Scratch)**

Right people...right support...it WORKS!







Computer Science A (AP)

- Overview of the course
- Who should take this course?
- What might a lesson from this course look like?
- Who can teach this course?
- Where can the resources be found?

AP CS A Overview

- Problem solving / Design solutions
- Implement programs to solve variety of problems
- Emphasis on object-oriented problem solving and design using Java language
- Open to all students, but students should have a strong background in mathematical reasoning and functions (Algebra II)
- Equivalent to a first year college computer science course for CS majors

MERRELL

A look at a sample lesson

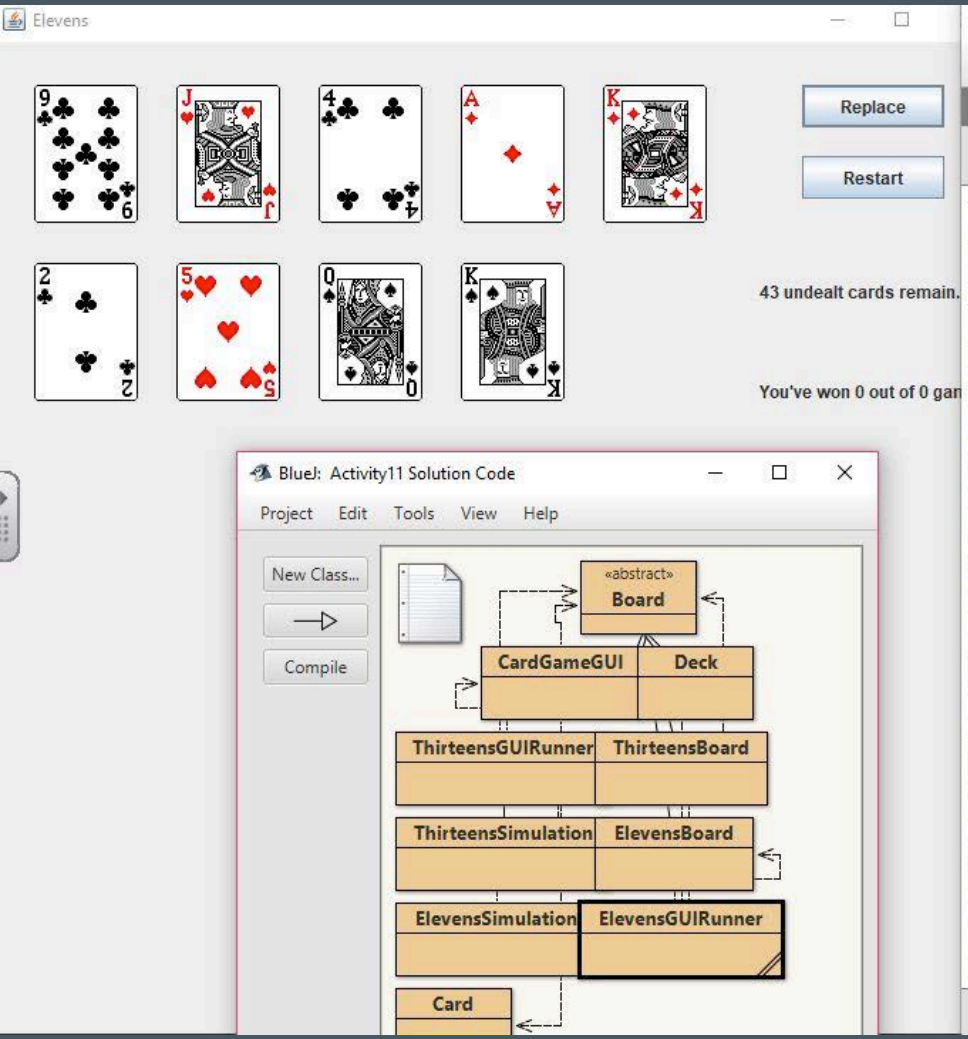
Lessons scaffold - start with basic coding constructs

```
public void broadcastMessage(String message,
                             ArrayList<String> members){

    String addresses = " ";

    for (String address:members)
        addresses = addresses + ", " + address);

    }
```


Elevens
Replace
Restart
43 undealt cards remain.
You've won 0 out of 0 gan
BlueJ: Activity11 Solution Code
Project
Edit
Tools
View
Help
New Class...
Compile
«abstract»
Board
CardGameGUI
Deck
ThirteensGUIRunner
ThirteensBoard
ThirteensSimulation
ElevensBoard
ElevensSimulation
ElevensGUIRunner
Card
Card - Activity11 Solution Code
Class
Edit
Tools
Options
Card
Compile
Undo
Cut
Copy
Paste
Find...
Close
Source Code
63 return pointValue;
64 }
65
66 /** Compare this card with the argument.
67 * @param otherCard the other card to compare to this
68 * @return true if the rank, suit, and point value of this card
69 * are equal to those of the argument;
70 * false otherwise.
71 */
72 public boolean matches(Card otherCard) {
73 return otherCard.suit().equals(this.suit())
74 && otherCard.rank().equals(this.rank())
75 && otherCard.pointValue() == this.pointValue();
76 }
77
78 /**
79 * Converts the rank, suit, and point value into a string in the format
80 * "[Rank] of [Suit] (point value = [PointValue])".
81 * This provides a useful way of printing the contents
82 * of a <code>Deck</code> in an easily readable format or performing
83 * other similar functions.
84 *
85 * @return a <code>String</code> containing the rank, suit,
86 * and point value of the card.
87 */
88 @Override
89 public String toString() {
90 return rank + " of " + suit + " (point value = " + pointValue + "
91 }
92 }
93

What is required to teach CS A?

- Teacher should have Java (object oriented language) coding experience

- Desktop or laptop computers with Java editor and Java development software (both free to download)

AP CS A Resources

Visit AP Central

AP COMPUTER SCIENCE A

https://apcentral.collegeboard.org/courses/ap-computer-science-a/course

AP Professional Development Event Calendar

March 2018 To February 2019 >>

25 June, 2018	8:00 AM ET Advanced Placement Summer Institute in Computer Science Principles
	8:00 AM ET Computer Science Principles - AP Summer Institute for New Teachers
26 June, 2018	8:00 AM ET Advanced Placement Summer Institute in Computer Science Principles
2 July, 2018	8:00 AM ET Computer Science Principles - AP Summer Institute for New Teachers
9 July, 2018	8:00 AM ET Advanced Placement Summer Institute in Computer Science A
	8:00 AM ET Advanced Placement Summer Institute in Computer Science Principles
	8:00 AM ET Computer Science A - AP Summer Institute
16 July, 2018	8:00 AM ET Computer Science A - AP Summer Institute
23 July, 2018	8:00 AM ET APSI in Computer Science Principles (3 Credits) Fordham
	8:00 AM ET APSI in Computer Science Principles (Non-Credit) Fordham
30 July, 2018	8:00 AM PT Advanced Placement Summer Institute in Computer Science A
	8:00 AM ET Advanced Placement Summer Institute in Computer Science Principles
	8:30 AM ET Computer Science A - AP Summer Institute

Curriculum Providers

A + Computer Science

CodeHS

Edhesive

IMACS

NMSI

Project Lead The Way

TEALS

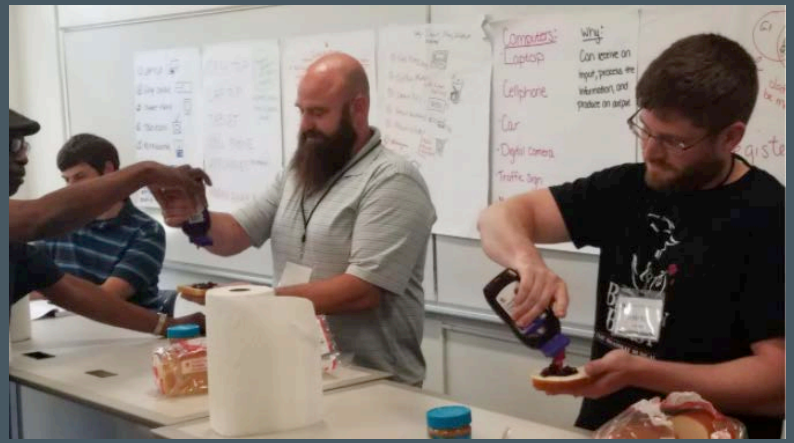
Panel

- Moderator: Pauline Lake (Trinity College)
- ECS and CSP Teacher: Seymour de Oliveira (Great Path Academy, Hartford)
- CS A and CSP Teacher: Melissa Fearrington (Simsbury High School, Simsbury)
- ECS and CSP Teacher: John Tusch (Global Communications Academy, Hartford)
- ECS and CSP Teacher: James Veseskis (Hartford Magnet Trinity College Academy, Hartford)

Possible Panel Questions

1. Question about being a pioneer CS teacher in your district - What is your background? Where did you start? What successes have you and your students had?
    a. ALL
2. What advice or suggestions would you give to other districts looking to start a CS track?
    a. Jim, John (speak to funding and equipment)
3. How did you recruit students to join your class? First state which class.
    a. Seymour, Jim
4. How do you build equity in all of these courses?
    a. Jim
5. If you taught CS A before CSP, why did you decide to also teach CSP and what impact, if any, has it had at your school?
    a. Melissa
6. If you taught CSP before ECS, why did you decide to also teach ECS and what benefit did it have for your students?
    a. Jim, Seymour
7. If you currently teach ECS, do you think your ECS students are ready to go directly into CS A? Why or why not?
    a. John
8. What PD opportunities are available?
    a. Speak to the importance of community

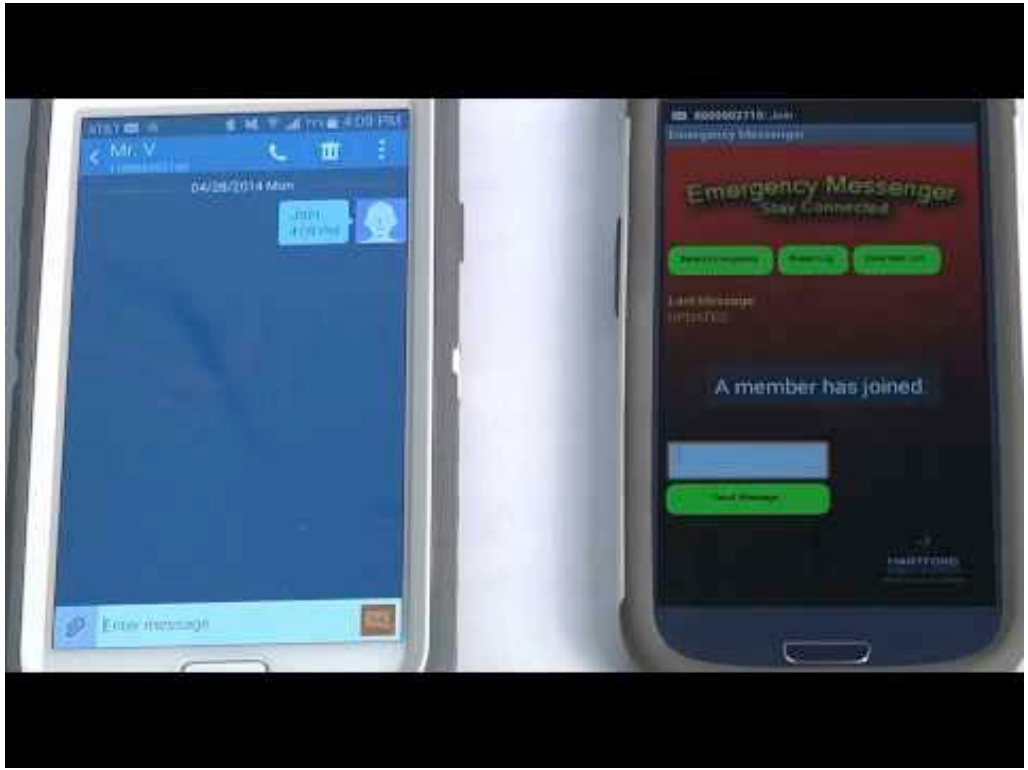
Thank you!



[ECS Edison Robots]

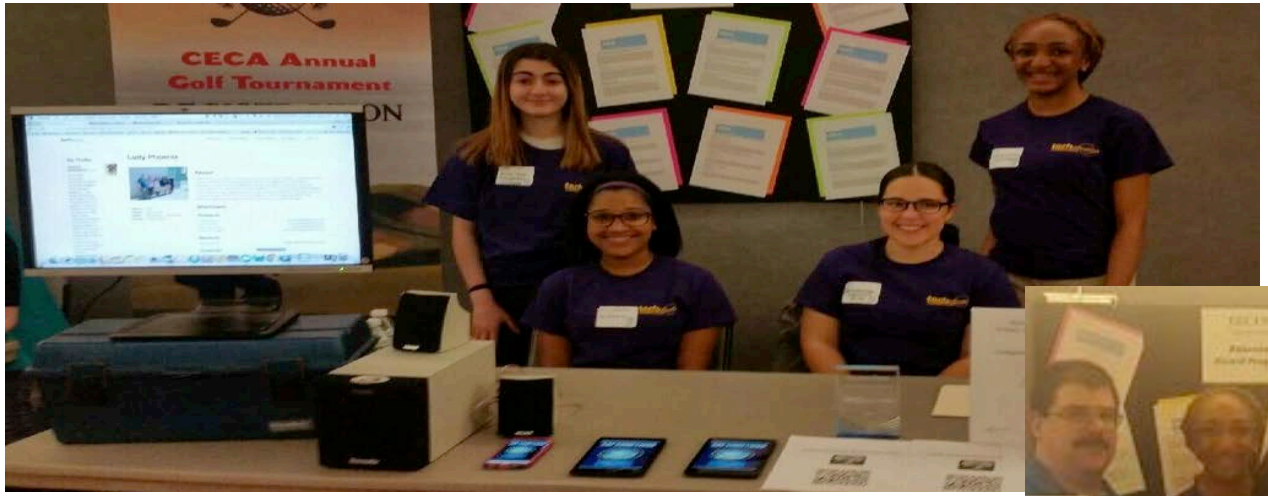
Emergency Messenger

Congressional App Challenge Winner - CT



Say Something

Technovation Challenge Semi Finalist, CT



Video

South Windsor High, CT

Apps for Preschoolers (Go to 26:35)