

## Broward County, Florida - Large Urban School District

### District Overview

- Broward is the 6<sup>th</sup> largest District in the US, 2<sup>nd</sup> largest in Florida, linguistically diverse with over 180 languages spoken by BCPS students.
- Broward is diverse. 41% of students are African Americans and 32% are Hispanic. 45% of students qualify for free or reduced lunch.
- The District has nearly 270,000 students and 14,300 teachers. There are 33 public high schools, 38 public middle schools and 136 public elementary schools.

### Highlights

- Superintendent buy in on a clear and measurable goal motivates administrative decisions
- Build a cross-departmental team
- Leverage the Hour of Code to inspire students and engage teachers
- Make teachers feel valued through consistent engagement and community building

### **Key Takeaway: Superintendent buy in on a clear and measurable goal motivates administrative decisions**

In 2013 Broward County Public Schools became the first district partner of Code.org, and committed to working directly towards making sure every student had access to computer science education, with a specific goal of ensuring every high school offered at least one computer science course within 3 years. The superintendent's commitment to this goal allowed the team to track progress and push school level leaders to adopt computer science courses.

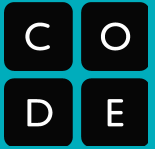
### **Key Takeaway: Build a cross-departmental team**

Superintendent Runcie built a cross-departmental team that had reach into curriculum (course alignment), talent development (certification and professional learning), data (to track success), and CTE (where all prior HS CS courses lived), led by a former school principal who had strong relationships with school leaders and was positioned outside of the other departments represented on the team. The team leader's position was essential to get buy in from other school leaders to offer computer science courses. This team meets regularly throughout the school year, and did a lot of work to make sure that they stayed on top of administrative timelines like course selection and teacher hiring.

### **Key Takeaway: Leverage the Hour of Code to inspire students and engage teachers:**

- Superintendent Runcie engages directly with students during Hour of Code.
- To spark interest among teachers, students, and families, Broward partnered with the District's Office of Public Communications to promote Hour of Code through media releases, on the web, and through social media using the hashtag #BrowardCodes.

# District Computer Science Implementation Examples



- District-wide support for Hour of Code over the past three years led to 1,100 events in Broward for CS Ed Week 2016.
- Business partners like the Apple Store host student groups during CS Ed Week.
- As more high schools began to offer CS, the team focused their Hour of Code efforts around HS feeder patterns to ensure there would be growing excitement around high school CS courses.

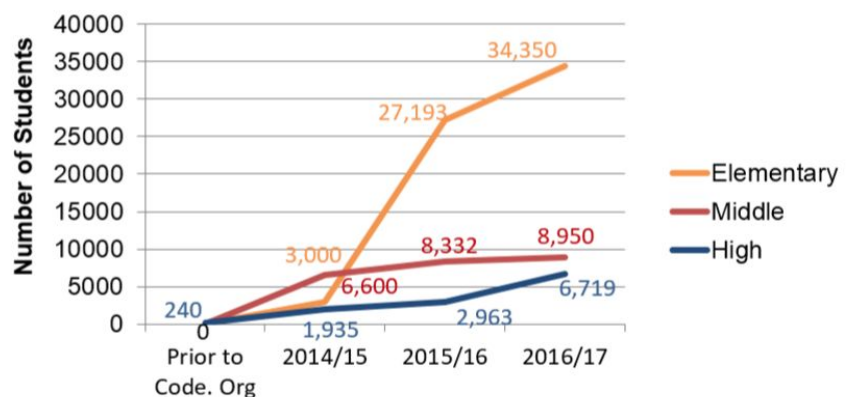
## Key Takeaway: Capture teacher interest beyond the first hour

- The team made sure there were options at the elementary, middle and high school levels available for teachers, and timed their teacher recruitment to follow the Hour of Code.
- At the high school level they pre-identified where the introductory course would fit, the standards it would align to, and the teacher certification required. By planning ahead and standardizing courses, they were able to designate a special course code (added a C onto the end) to allow them to easily pull data for the cohorts of teachers going through professional development. This makes it much easier to understand what student population is being reached, and to share the success of the program.

## Key Takeaway: Make teachers feel valued through consistent engagement and community building

- As a district Broward offered in-service points towards re-certification, and stipends for participating in the professional learning.
- Provided food at all professional learning
- Made sure to schedule professional learning to align to the district PD calendar.
- Provided pathways for engaged educators -- teachers could build up from teaching an intro-level course to an AP level course.
- The team hosts CS community meetups, often with food and drink, as an opportunity to build camaraderie among CS teachers, and as a low lift way to engage industry partners.
- Highlight the success of students, fueled by their engagement in college and career pathways, encourages teachers to continue teaching.

**Number of BCPS students participating in computer science courses and curriculum**



## Charles County, MD -- Medium sized exurban district

### District Overview

- There are 26,390 students in the district, 54% African American, 8% Hispanic.
- Charles County has 7 high schools, 8 middle schools and 21 elementary schools.
- Charles County Public Schools employs 3,542 people. There are 2,079 teachers, 1,122 support staff, 114 technical employees and 227 administrators. More than 78 percent of staff reside in Charles County.

### Highlights

- Comprehensive plan to put CS across K-12
- Superintendent buy in
- Leveraging existing state requirements
- Pushing for statewide policy change

### **Key takeaway: Find someone on the ground who cares about this beyond their job description.**

In this case we had a local teacher who was single mindedly focused on building a CS program with or without help. This person was able to effectively get buy in from the superintendent and managed the initial implementation of CS programs across the district. This lead was able to build a 3 year plan to expand CS to every school in the district, and district leadership were able to message their leadership in the CS education space.

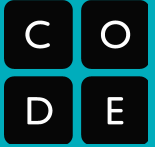
### **Key Takeaway: Fit computer science into existing graduation requirements for instant school leader buy in.**

On the ground, the district was able to take a state required technology course, which at the time had a limited number of curricular options, and position a new introductory CS course as a more engaging and relevant class that could fulfil this requirement. By positioning CS in this spot, school leaders viewed computer science as a way to help them meet existing goals as opposed to something new they had to fit into already busy student and teacher schedules.

### **Key Takeaway: To reach underrepresented students fit courses into graduation requirements (or make new ones)**

By leveraging the state required technology course all students in the district had a reason to take CS, and administrators involved in scheduling had incentive to program students into the course. This immediately shifted the student profile in computer science courses. *In Charles County 51% of the students taking introductory CS were young women vs. 17% in a neighboring district that did not allow the course to fulfil a requirement.* ([source](#))

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**Key Takeaway: Leverage superintendents to influence state decisions.**

After seeing the success of allowing introductory CS to count towards a pre-existing graduation requirement, we asked the state department of education to make the change official state-wide. The Charles County superintendent then pushed for the state superintendents association to make an official recommendation to the state board. It took local voices to get the policy across the finish line.

## Eufaula City Schools, AL -- Rural School District

### District Overview

- Oldest city school district in Alabama, and is located on Lake Eufaula which covers 46,000 acres with 640 miles of shoreline. Eufaula is 84 miles from Montgomery, Alabama.
- The district offers a Pre-K program, kindergarten through 2 primary school, a grades 3 through 5 elementary school, a grades 6 through 8 middle school, and a grades 9 through 12 high school.
- Eufaula has 2700 students in the system, with 72% of those on free and reduced lunch. It's worth noting that those figures used to be the reverse; its residents have experienced significant job losses and economic downturns in recent years and the district faces funding challenges that are not surprising in a small, rural Alabama district.

### Highlights

- Superintendent understanding that “there is a need for CS no matter where you go”
- At the K-5 level there’s opportunity to truly reach *all students* and get them interested before computer science stereotypes set in
- It’s okay to combine programs to best meet your needs
- Connections to industry are everywhere

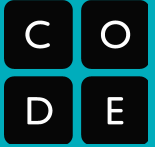
### **Key Takeaway: Supportive messaging from district leadership can help address student and teacher misconceptions.**

In a small district, away from the interstate and isolated from other parts of the state, students and teachers may not be aware of the opportunities linked to CS education, but a committed superintendent can help challenge those misconceptions. Especially at the high school level, teachers and students needed to hear the message that this isn’t the “old” computer science, and in Eufaula, Superintendent Davis was able to share that message from the top down. In particular she communicated the importance of preparing students for jobs they don’t know about or may not exist yet, and more broadly showing kids “how to dream.” This student focused messaging brought staff and students on board.

### **Key Takeaway: At the K-5 level there’s opportunity to truly reach *all students***

Superintendent Davis also backed up her messaging to students by providing professional development to *all of the district’s K-5 teachers*. This ensures every student is learning the foundations of computer science at a very early age. Unlike high school where graduation requirements and master schedules can limit the ability to reach all students, in the K-5 space it’s possible to quickly incorporate CS into every student’s education experience. By leveraging high quality professional development and curricular resources, this can also be done in a way

# District Computer Science Implementation Examples



that invests in the teachers already working in the district at relatively low costs. Instructional coaches in elementary schools also make it a priority to ensure CS is integrated in lessons.

## **Key Takeaway: It's okay to combine programs to best meet your needs**

While many programs (especially in the Career and Technical Education realm) are offered as course sequences, it's important to allow for some choice and differentiation to meet local needs. Eufaula has combined programs from Career Technical Education (CTE), Code.org, Project Lead the Way (PLTW), A+ College Ready (AP), and Tuskegee University (ExploringCS.org) to provide support for students across grades and to ensure all students in grades K-12 are exposed to computer science. At the middle school (AMMS), students are able to choose between Computer Discoveries (Code.org), PLTW Launch (STEM), PLTW Gateway (pre-engineering), and Career Technologies (CTE). At the high school (EHS), students are able to choose from Computer Discoveries (Code.org), Exploring Computer Science (Tuskegee University), AP Computer Science (A+ College Ready), PLTW Engineering, Business Technology Applications (CTE), IT Help Desk, and Drones. The district has also leveraged interested partnerships with local and regional businesses and organizations to round out upper level courses.

## **Key Takeaway: Connections to industry are everywhere**

While many rural students and teachers assume computer science jobs are only located in big cities, the truth is there are connections everywhere. Eufaula has partnered with the Coast Guard to highlight how drones are becoming part of the local agriculture industry, with Johnson Outdoors (Humminbird) to demonstrate how computer science skills are utilized in producing depth finders for fishing boats, and with American Buildings to see how computer science, math, and engineering skills are linked in the architectural process.

## Computer Science Integration (6-12)

