



Applied Learning Department Update on STEM+CS Initiatives

February 12, 2019

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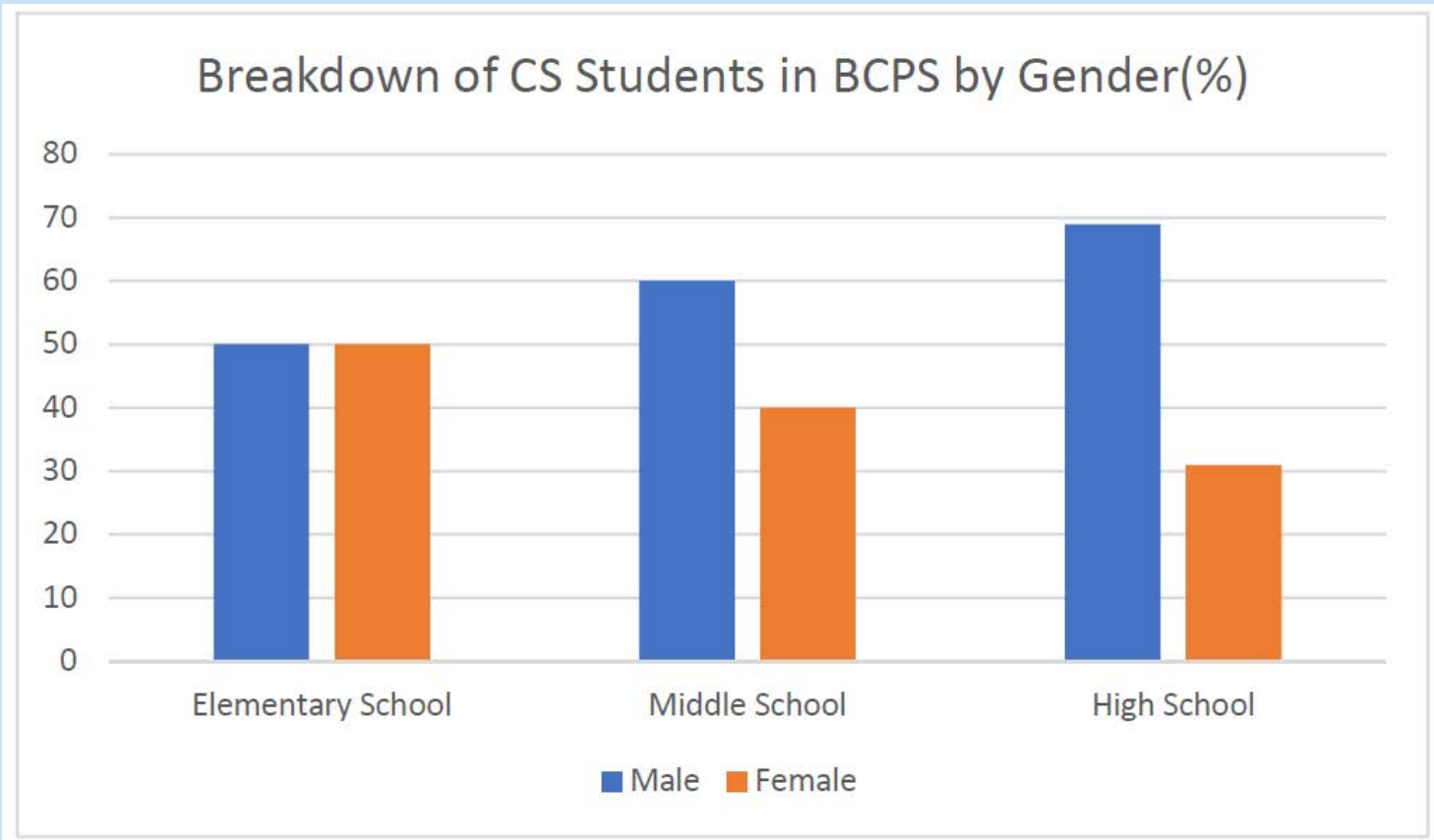


Our Vision: For every student in every school

- **Hands-on STEM and Computer Science** through authentic experiences and competitions.
- **Foundational skills** in collaboration, communication, critical thinking, computational thinking, problem-solving and perseverance.
- **Life ready** for future studies and careers in any area, not only those typically thought of as STEM-related.

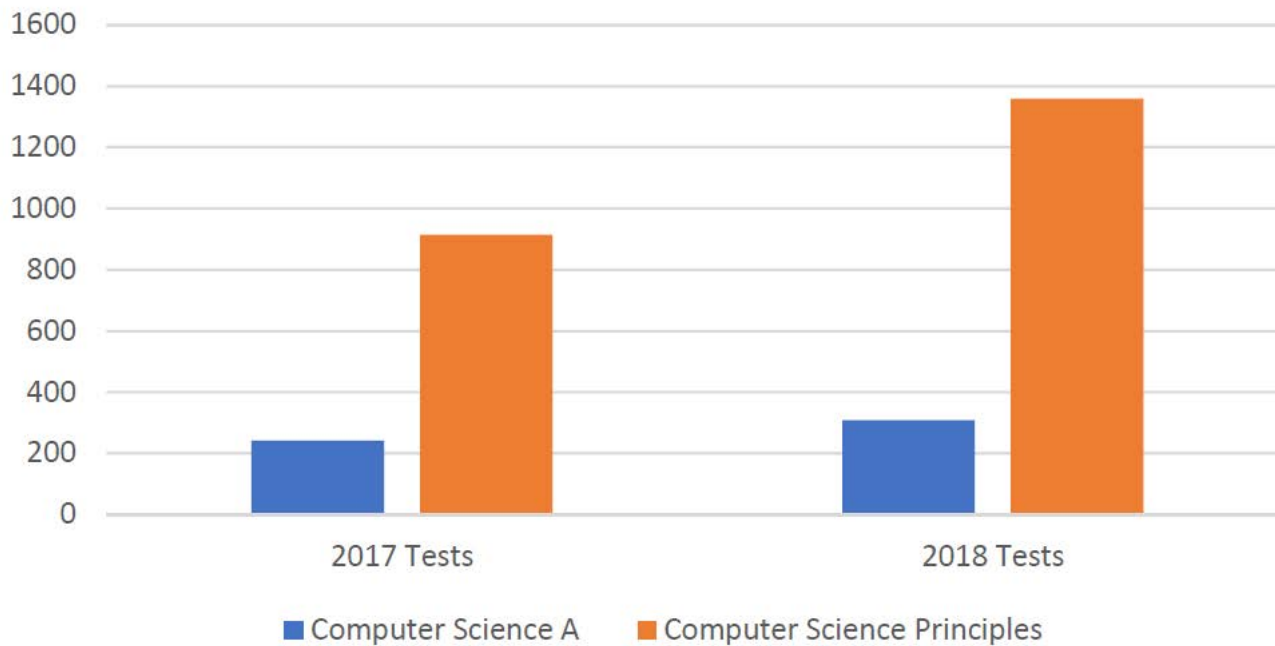


Who is taking CS Classes in Broward County?



Who is taking AP Computer Science in Broward County?

AP CS Exams Taken in 2017 and 2018



AP CSA

- **28% increase!**

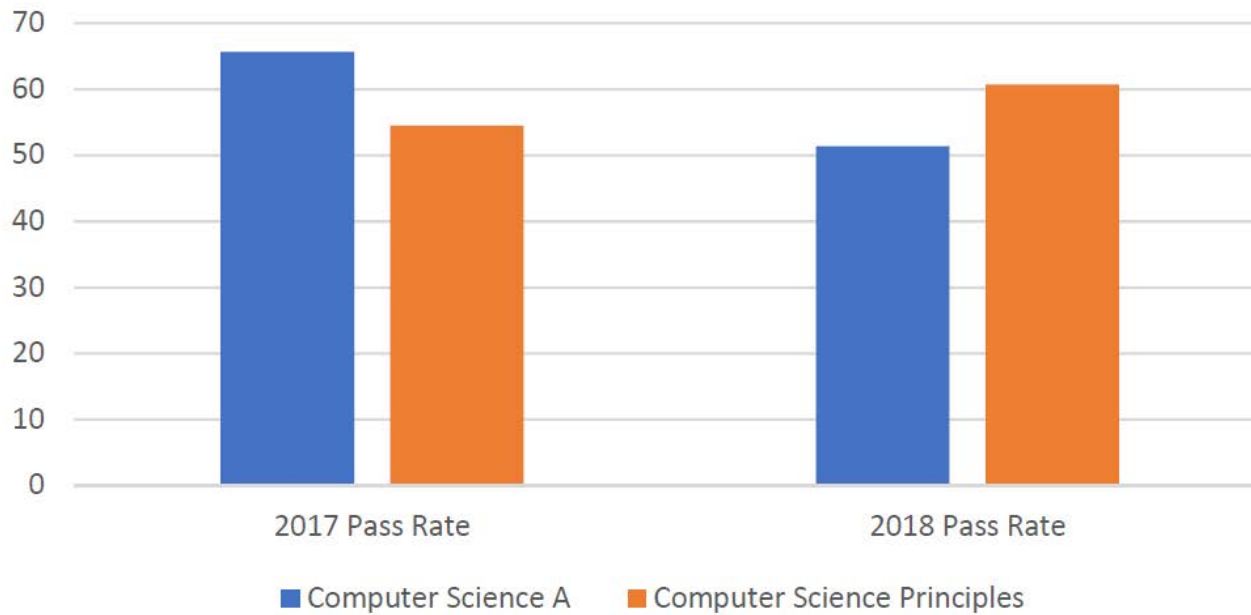
AP CSP

- **48% increase!!**



How do AP CS scores from the last two years compare?

AP CS Passing Rate in 2017 and 2018



AP CSA

- **14% decrease**

AP CSP

- **6% increase!!**



What careers are BCPS students interested in?

Our students are telling us what careers they are interested in every single day. Here's the latest snapshot – out of over 1,000 possible careers, these are the top 10 as chosen by Broward County Students...

...7 OF THE TOP 10 ARE STEM FIELDS!!

...3 ARE COMPUTER SCIENCE FOCUSED!!!

...ALL 10 CAN USE STEM AND CS DAILY!!!!

Surgeons
Athletes
Photographers
Pediatricians
Graphic Designers
Computer Programmers
Video Game Designers
Actors
Veterinarians
Lawyers



Highlights of STEM+CS in 2018-19

NSF funded research in partnership with the University of Chicago to develop a model for integration of computer science in grades 3-5



In partnership with SciStarter.com, design and implement a project-based learning portal connecting middle grades students to relevant citizen science and local problems.



A Hewlett Foundation funded research-practice partnership with the University of Chicago to identify and spread critical thinking practices in elementary grades.



Highlights of STEM+CS in 2018-19

Robotics doubles to 113 schools with continued funding from RECFoundation. Several teams will be competing at the state level in Miami in March.



All Points North
FOUNDATION

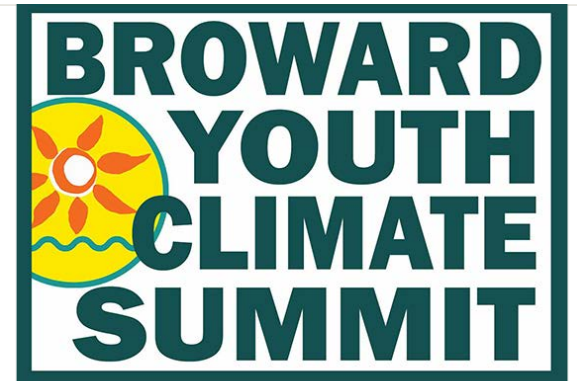
Infosys

FOUNDATION USA

400 Middle and High School students gathered to develop plans for action to address climate change effects locally. Schools will receive mini-grants to implement their projects.



STEM for ALL and #STEMPathy combine in two grant funded projects. Addressing needs of ESE students, and middle grades students create and code for social good.



For our future



STEM+CS ADVISORY BOARD



@BCPSAppLearning
@BrowardSTEM

Highlights of STEM+CS in 2018-19

Makerspace and STEM Lab design & support for implementation in the curriculum providing students at all grades open-ended opportunities to tinker and create.



STEM in the Parks initiative partners middle schools and their local park for authentic problem-based learning. In partnership with Broward County Parks and Broward County Env. Resilience.



SECME STEM Olympiad program with more than 100 schools participating is our largest single day STEM event. March 16 at Cooper City High School.



School Impact: Driftwood Middle School Green Team

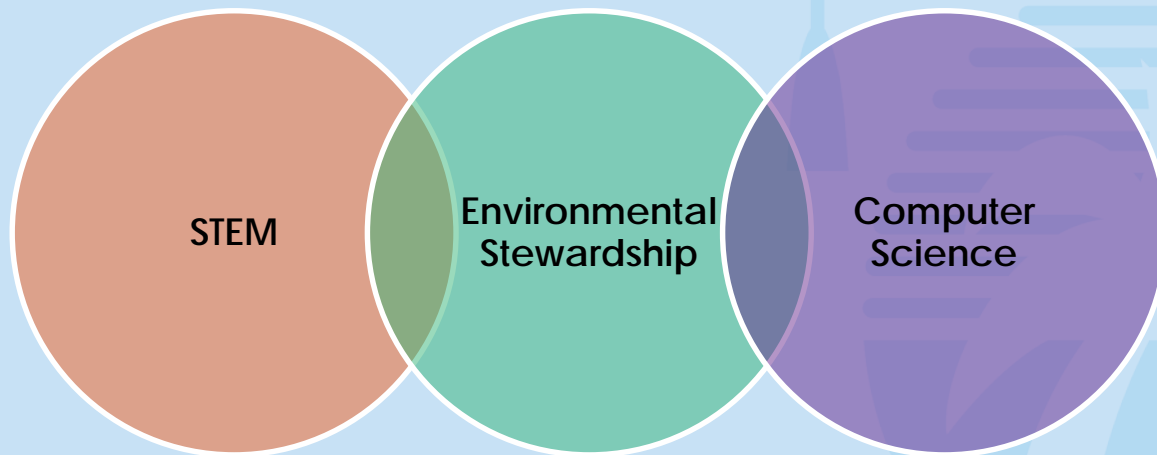
Students: Kayla, Tristan, Kylie

Teachers:

Linda Gancitano, Green Team Sponsor

Matthew Feiler, Computer Science Teacher

Principal: Steven J. Williams



WHAT THE GREEN TEAM DOES



Green team is a project-based learning club at Driftwood Middle that is focused on creating a difference and spreading community awareness.

Each month they take on a topic, create action plans in teams, and implement these plans.

Topics can be anything from energy, plastic, water, gardening, and healthy living.

Once the green team produces solutions, they follow through outside of school.



STUDENT CREATORS

Kayla is an eighth-grade student at Driftwood Middle School.

She has been the Green Team President from 2017-2019 and was the P3 Eco-Challenge Student of the Year in the 2017-2018 school year.

She has spoken at numerous Lauderdale By the Sea commissioner meetings and was a student leader at the Broward Youth Climate Summit. Besides green team, she is a National Youth Council Leader for Fuel Up to Play 60.

Outside of school, she plays competitive piano, soccer, and she codes.



STUDENT CREATORS

Tristan is an eighth-grade student at Driftwood Middle and a Broward Youth Climate Summit student leader.

He is the 2018/2019 Vice President of Driftwood Middle Schools Green Team.

Outside of School he has attended events like Water Matters Day, and Commissioner Meetings to get plastic straws banned in Lauderdale By the Sea.

He has been a member of the Green Team for two years.



STUDENT CREATORS

Kylie is an 8th grade student at Driftwood Middle School.

She is the historian of the 2018/2019 green team.

Outside of school, she participates in a variety of clubs including Green Team, National Junior Honor Society, and Fuel Up to Play 60.

Kylie takes pleasure in coding, reading, and sports.

She was a student leader in the Broward Youth Climate Summit.

Kylie has been a member of the Green Team for 2 years.



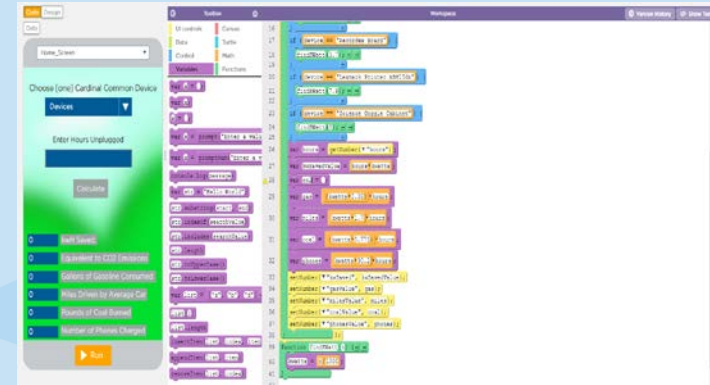
ENERGY AUDITS USING MICROSOFT FORMS AND CODE.ORG APP BUILDER

Driftwood was the first school to start the "How Low Can You Go" Challenge.

Its purpose is to reduce the use of energy in the school. Energy audits are conducted each week to grade teachers on how well they conserve energy.

A Microsoft form is used to collect the data from the energy audits.

Besides the form, a team has designed an app that shows common devices found in the classrooms and how much kWh is saved when these devices are unplugged.



Driftwood Energy Audit

1. Date

Please input date in format of M/d/yyyy

2. Teacher

Enter your answer

3. Room #

Enter your answer





Sustaining BrowardSTEM: A Call to Action



How can you help provide STEM and Computer Science experiences to **every student in every school?**



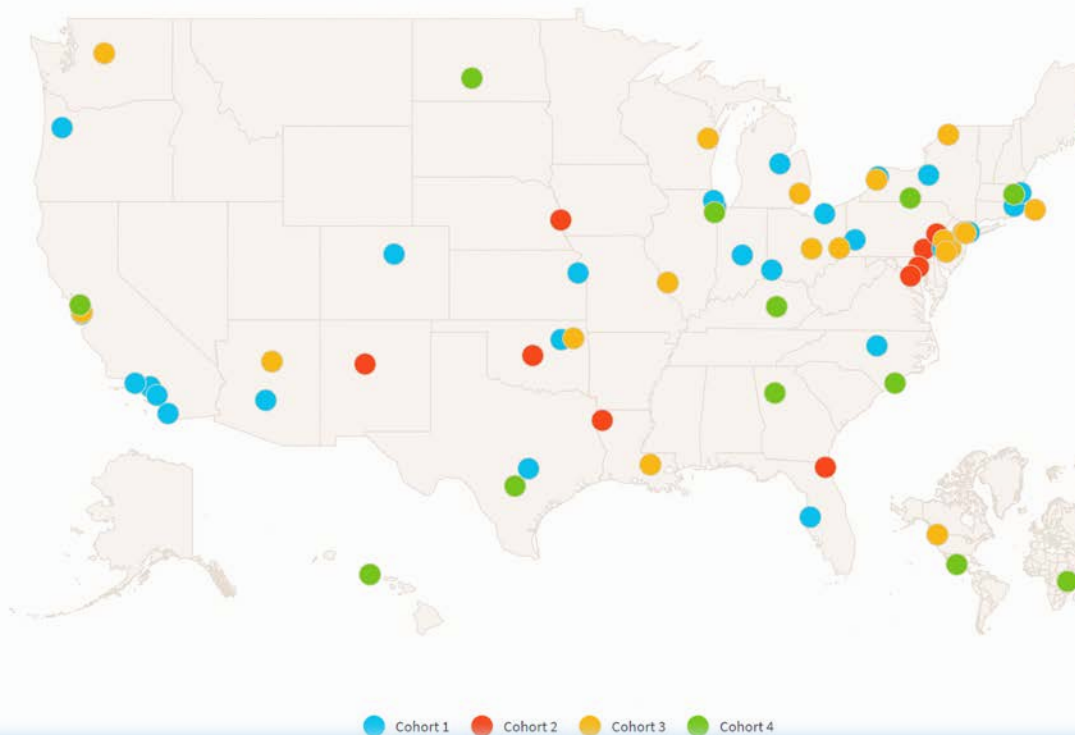


Stakeholders



STEM Learning Ecosystems (stemecosystems.org)

Participating STEM Learning Ecosystems



- Community of Practice
- 68 STEM Learning Ecosystems
- Platform/criteria to benchmark and drive change
- Applications Due February 28



Considerations and Discussion

- How can we sustain and grow the work toward STEM for ALL?
- Is joining the formal STEM Learning Ecosystem of value for the Broward community?



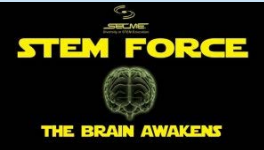
SAVE THE DATES: UPCOMING EVENTS IN 2019

Feb 2 VEX IQ Robotics (elementary) @ Nova High School



Feb 9 VEX VRC Robotics (middle and high) @ Rickards Middle

Feb 23 VEX IQ Robotics (middle) @ Stranahan High School



March 9 Water Matters Day @ Tree Tops Park

March 16 SECME STEM Olympiad @ Cooper City High School

April 13 EdCamp EmPOWERing STEMpathy sponsored by FPL



May 4 Computer Science Fair and App Challenge @ Arthur Ashe

May 8 P3 EcoChallenge Awards



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