Computer Science in California Schools

10 November 2021

CALIFORNIA COUNTY BOARDS OF EDUCATION

This presentation: bit.ly/3EOvsJr

Who are we?



Dr. Emily Thomforde
Computer Science Program Advisor
California County Boards of Education



Mark Lantsberger
Curriculum & Instruction Coordinator, Computer Science
San Diego County Office of Education

What is K-12 CS in CA?

CS is...

- Hardware design and develop - ment
- Analyzing large data sets
- Creating new software
- Learning to safely use the internet
- AI and machine learning
- Program ming and coding

CS is not...

- Searching the internet
- Using Zoom, Teams, or Meet
- Creating documents or presentations on the computer
- Learning to type or use a mouse
- Creating videos or music on the internet
- Playing video games

CA K-12 CS Standards

Why is CS education important?

It will strengthen local economies by attracting companies looking for technologically competent workers.

1

Youth shouldn't just be consumers but also producers of technology.

2

Computing provides youth with the ability to express themselves creatively and have voice.

3

We need to produce scientific and technological innovations that solve 'wicked' problems such as climate change and cybersecurity.

4

It will level the playing field and help close the "digital divide" around tech for lower income youth.

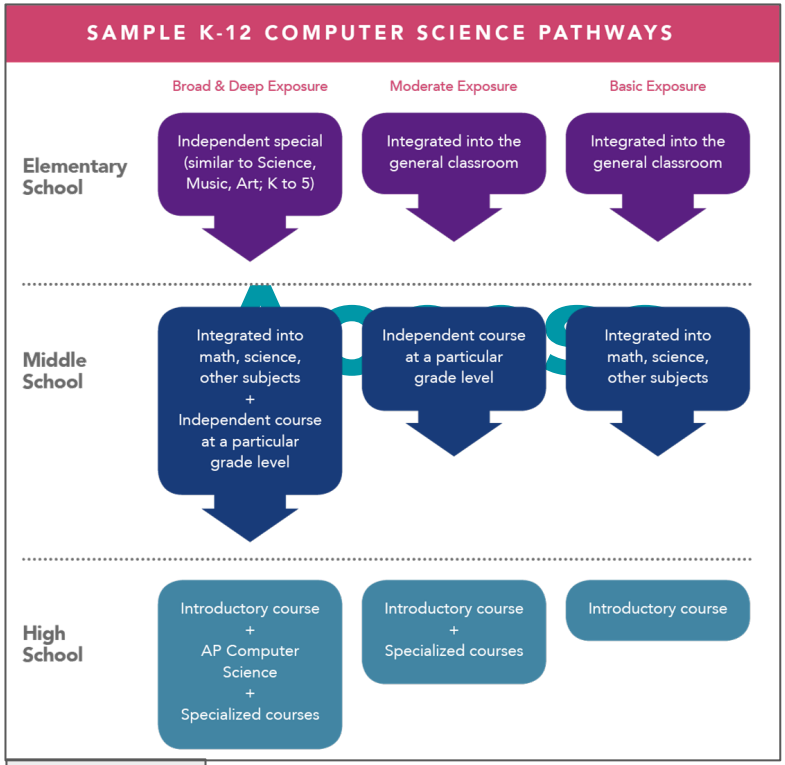
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Making technology is fun, so bringing CS to schools can increase student engagement.

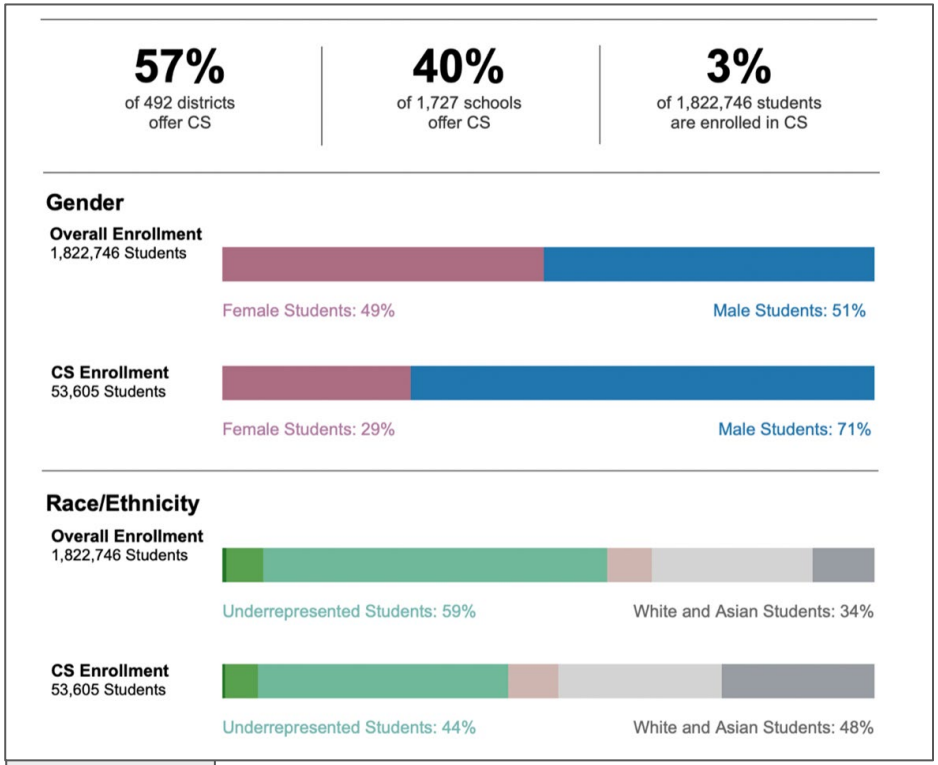
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CSforAll.org

What does success look like?



k12cs.org



csforca.org

What numbers are we looking for?

100

100% of schools offer at least one CS course

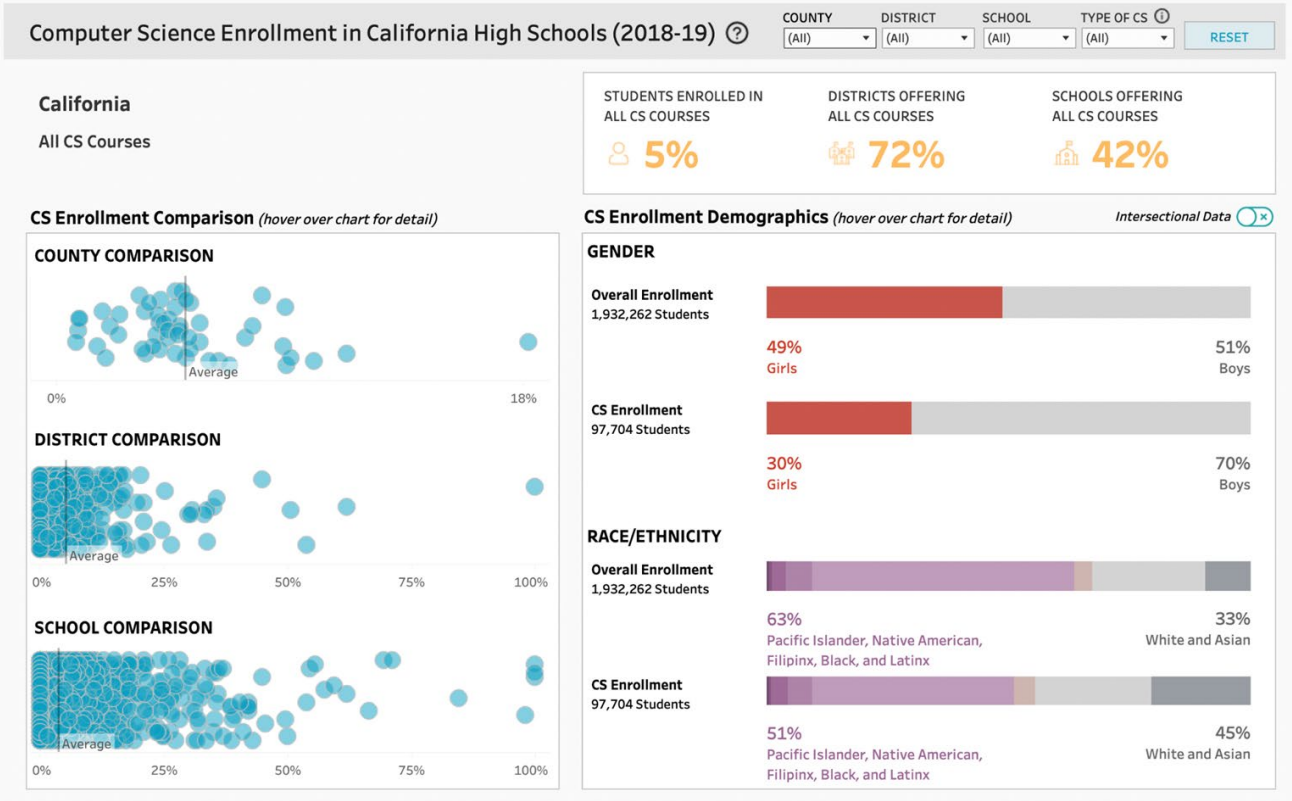
35

35% of students are enrolled in a CS course

1.0

CS student demographics exactly match population demographics

What does CS look like in CALIFORNIA?



The Kapor Center has just issued an updated version of this tool with data from 2018-2019. csforca.org/the-data

More info at ccbe.us/cs-toolkit

What does CS look like in SAN DIEGO?

San Diego County

All CS Courses

STUDENTS ENROLLED IN ALL CS COURSES	DISTRICTS OFFERING ALL CS COURSES	SCHOOLS OFFERING ALL CS COURSES
4%	68%	47%

CS Enrollment Comparison *(hover over chart for detail)*

COUNTY COMPARISON



DISTRICT COMPARISON



SCHOOL COMPARISON



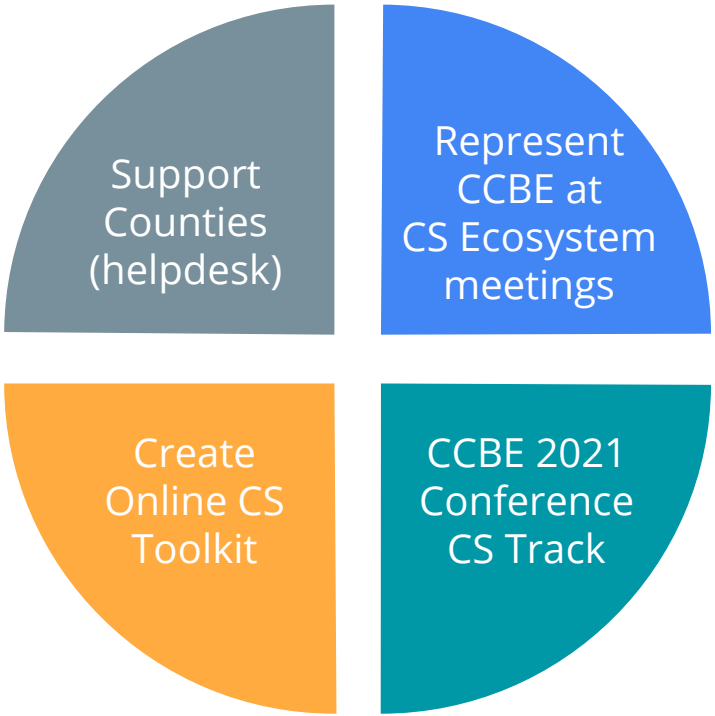
CS Enrollment Demographics *(hover over chart for detail)*

Ratio of CS Enrollment to Overall Enrollment. A value closer to 1 indicates equitable representation.

Intersectional Data



How can CCBE help?

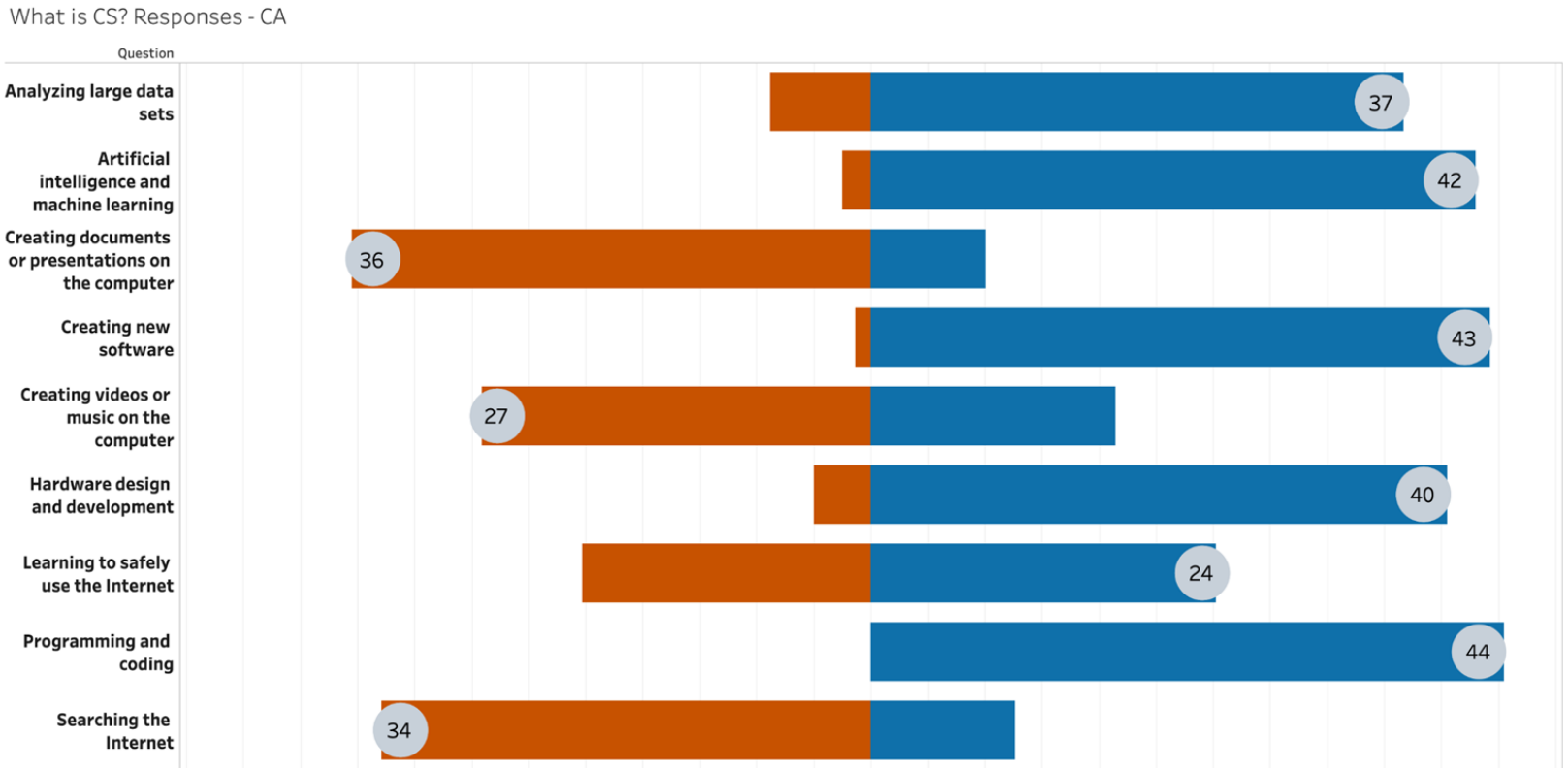


The California County Boards of Education commit to:

- Building an online toolkit to support California counties and school districts working towards equitable computer science implementation;
- Dedicating a track at our 2021 Annual Conference to equity in computer science education;
- Sponsoring a CS Helpdesk to provide advice to county administrators on curriculum, instruction, implementation, and policy.

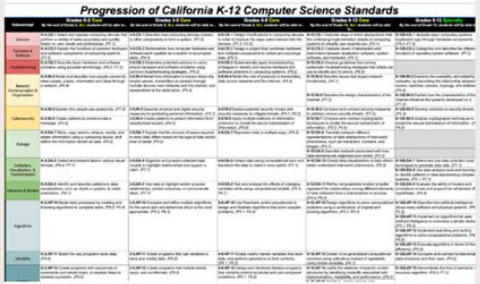
CCBE #CSforAll Commitment 2021

Do our counties understand what CS is?



CS Toolkit

What does CS look like in K12?



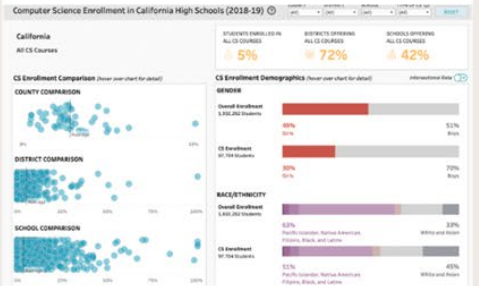
CA K-12 CS Standards

How can we implement CS equitably?



CS Equity Guide

Who is learning CS in my area?



CS Data Tool

Curriculum | Instruction | Implementation | Policy

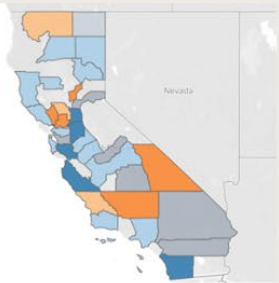
Computer Science News



Administrator Training at Autumn of CS



2021 CCBE Annual Conference



2021 CCBE CS Landscape Report



This Week in CSEd: October 11-17, 2021



SCRIPT Facilitator Training: November 10



CS Funding in the 2021 State Budget

CS Helpdesk

The **CCBE Computer Science Helpdesk** is now open to field CS-related inquiries from **board members**, **administrators**, **principals**, and **teachers** across California.

Email: emily@ccbe.us * Phone: 408-823-9346 * Calendar: calendly.com/doctorem

New! Office Hours every Tuesday 3-4pm on Zoom

Dr. Emily Thomforde



What does CS look like at SDCOE?

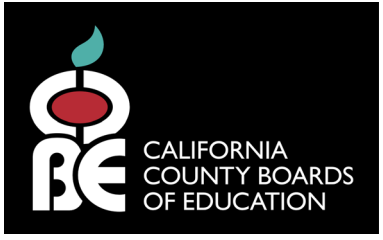


SDCOE is advancing CS in our county and across the state!

- One of 5 counties in California with a dedicated full-time CS coordinator.
- Contributing to and partnering with national, state, and local advocacy organizations.
- Conducting locally focused and tailored professional development.
- Partnering with local districts to build implementation capacity.

What does CS look like at SDCOE?

Contributing to and partnering with national, state, and local advocacy organizations.







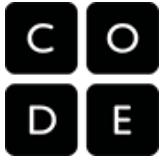


















What does CS look like at SDCOE?

Conducting locally focused and tailored professional development.

CSforCA

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FUTURE WITHOUT BOUNDARIES℠

EQUITABLE IMPLEMENTATION OF COMPUTER SCIENCE FOR SCHOOL LEADERS

Administrator Workshop

san diego county office of EDUCATION
FUTURE WITHOUT BOUNDARIES℠

WE HAVE COMPUTER SCIENCE STANDARDS??!!



CSAwesome
csawesome.org

national center for computer science education
The College of St. Scholastica

SAN DIEGO MESA COLLEGE

CSTA San Diego

san diego county office of EDUCATION
FUTURE WITHOUT BOUNDARIES℠

Grading for EQUITY

TACC
TEXAS ADVANCED COMPUTING CENTER

EPIC
EXPANDING PATHWAYS IN COMPUTING

ECEP Expanding Computing Education Pathways

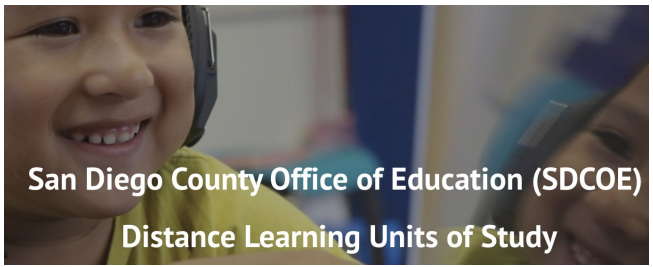
NSF NSF-CNS-1822011

ECEP Expanding Computing Education Pathways

Scaling Inclusive Pedagogy (SciP)

Strategies for Effective and Inclusive CS Teaching





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FUTURE WITHOUT BOUNDARIES℠

GETTING STARTED IN THE ENDGAME (6 - 12)

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STARTING ON THE RIGHT FOOT (K - 6)

What does CS look like at SDCOE?

Partnering with local districts to build implementation and pedagogical capacity.

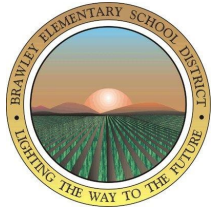










































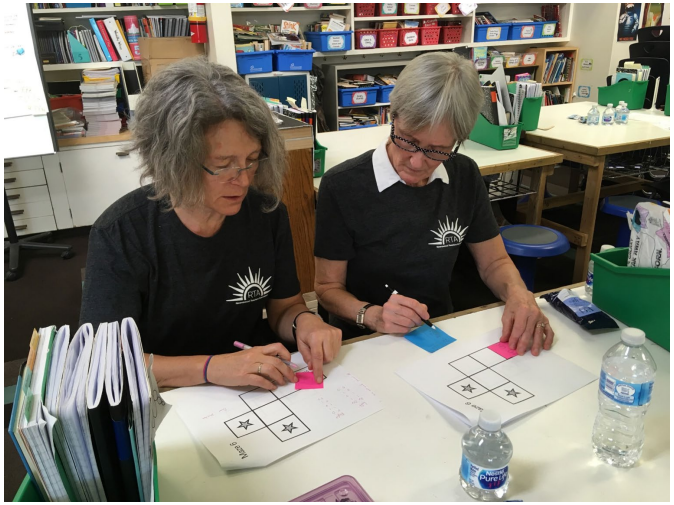








We are not deciding whether or not to teach CS in California schools.









We are deciding who deserves to learn it.