

OAKLAND UNIFIED SCHOOL DISTRICT

COMPUTER SCIENCE CASE STUDY

JANUARY 2026



Overview

Oakland Unified School District (USD) has a long-standing approach to computer science education that embraces the exploration of new content areas and approaches to expanding access for students. The district offers computer science across multiple grade levels, with particularly strong middle school access and high school pathways that include Advanced Placement (AP) Computer Science courses and sequenced coursework in specialized academies. These efforts are supported by a small central computer science team and philanthropic partnerships that have enabled experimentation with emerging areas such as data science, robotics, and artificial intelligence (AI). Nevertheless, access remains uneven across schools, especially at the high school and elementary levels, where offerings depend on staffing capacity, site priorities, and pathway structures. As Oakland USD works to stabilize staffing, strengthen coherence, and expand access at schools that currently lack computer science, district leaders describe this period as one of refinement and sustainability, balancing innovation with more consistent and equitable implementation.



Oakland Unified School District

Oakland USD is a large, urban TK–12 district in the Bay Area serving more than 45,000 students. The district’s computer science efforts are led by a small, centralized team that includes a computer science coordinator, a computer science specialist, and an engineering coach. These positions, along with dedicated full-time computer science positions in the middle schools are supported in part through a philanthropic partnership with [Salesforce](#) that launched in 2016. This funding enables the district to build and sustain capacity beyond the means of district resources alone. District leaders describe a “try it and see” approach that encourages innovation and responsiveness to student interests, shaped by the district’s diverse student population and proximity to Silicon Valley. Computer science at the elementary level remains decentralized and dependent on individual teacher initiative, while high school access varies by site and pathway structure, with some schools requiring all ninth graders to take AP Computer Science Principles (CSP) and others offering computer science only through electives or within specialized academies.



Computer Science Course Offerings

Computer science offerings in Oakland USD vary by grade level and school site. At the elementary level, there is no districtwide computer science curriculum; access is ad hoc and depends on individual teacher interest or the presence of site-funded technology teachers, often supported through local budgets. Middle school students historically have had broader access through standalone computer science courses, with some schools offering a semester-long introductory course in sixth grade followed by full-year options in seventh and eighth grades. Middle school curricula emphasize foundational computer science concepts such as problem solving, decomposition, and debugging and include programming, physical computing with tools like Circuit Playground and LEGO robotics, animation and storytelling, emerging AI units, and a newly developed data science unit. To support coherence across multiple years of coursework, the district has developed scope-and-sequence guidance to reduce content repetition. High school offerings are more uneven and shaped by pathway structures and staffing. Some schools require all ninth graders to enroll in AP CSP, with exam participation varying by site, while others offer AP CSP as an elective or within specialized pathways. At Oakland Technical High School, for example, a dedicated CS academy offers a sequenced pathway in which sophomores code using JavaScript through Code.org curriculum, juniors transition to coding with Python, and seniors complete capstone projects in areas such as Unity game development or web design. Across grade levels, course availability fluctuates in response to staffing capacity, bell schedule configurations, teacher turnover, and dual enrollment decisions.

Exhibit 1. Computer Science Course Enrollment in Oakland USD

Year	Computer science students	Computer science courses
2018–19	2,285	92
2019–20	2,246	96
2020–21	1,227	54
2021–22	2,006	97
2022–23	1,720	83
2023–24	1,842	83
2024–25	2,283	97



Computer Science Course Enrollment

Computer science enrollment in Oakland USD reflects both broad early exposure and uneven access across later grades and school sites. Enrollment is highest in ninth grade, and enrollment patterns by race/ethnicity and gender largely mirror districtwide demographics. Nevertheless, disparities persist at

schools that do not offer computer science, many of which serve predominantly Black and Hispanic student populations.

Enrollment by Grade Level

Computer science participation in Oakland USD is highest in ninth grade, particularly at schools where AP CSP is required or widely offered. This structure creates broad early exposure but does not extend uniformly into upper grades. Enrollment drops sharply in Grades 10–12 as access becomes increasingly tied to pathway participation, with guaranteed opportunities largely limited to students enrolled in designated computer science or technical academies. Students outside these pathways often face scheduling constraints that limit continued participation.

Exhibit 2. Oakland USD Computer Science Course Enrollment by Grade Level

Grade	Overall enrollment 2024–25	Computer science enrollment						
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
6	13%	13%	13%	23%	21%	22%	18%	18%
7	12%	11%	10%	11%	8%	13%	12%	9%
8	13%	10%	12%	11%	9%	13%	14%	11%
9	15%	63%	37%	36%	36%	25%	26%	27%
10	15%	1%	14%	9%	11%	11%	13%	12%
11	15%	0%	6%	8%	9%	10%	11%	13%
12	13%	1%	9%	2%	7%	7%	8%	10%

Source: CALPADS, Oakland USD Department of Research, Assessment, and Data

Exhibit Reads: In 2024–25, 15% of students in Oakland between Grades 6 and 12 were in Grade 10. In 2024–25, 12% of students enrolled in a computer science course in Oakland were in Grade 10.

Enrollment by Race/Ethnicity

Enrollment patterns by race and ethnicity generally reflect districtwide demographic trends. Declines in Black student participation in computer science mirror overall decreases in Black student enrollment across the district, while Hispanic participation has increased alongside broader demographic growth. District leaders noted that access disparities persist across school sites, as several high schools serving predominantly Black and Hispanic student populations do not offer computer science courses due to structural factors such as staffing capacity and availability of full-time computer science teachers.

Exhibit 3. Oakland USD Computer Science Course Enrollment by Race/Ethnicity

Race/ethnicity	Overall enrollment 2024–25	Computer science enrollment						
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
Asian	10%	16%	18%	14%	15%	13%	15%	13%
Hispanic	48%	39%	39%	41%	40%	38%	41%	46%
White	12%	10%	10%	12%	11%	13%	12%	12%
Black/African American	19%	28%	25%	24%	23%	22%	21%	20%
Filipino	0%	1%	1%	1%	1%	1%	1%	1%
Multiple	7%	3%	4%	5%	7%	8%	8%	6%

Source: CALPADS, Oakland USD Department of Research, Assessment, and Data

Note. Demographic groups ‘Missing,’ ‘American Indian/Alaskan Native,’ and ‘Native Hawaiian/Other Pacific Islander’ are not included in the exhibit because the percentage of students in these groups is lower than 1%. The sum of the percentages may not equal 100%.

Exhibit Reads: In 2024–25, 48% of students in Oakland were Hispanic. In 2024–25, 45% of students enrolled in a computer science course in Oakland were Hispanic.

Enrollment by Gender

Female participation in computer science approximates overall district gender demographics. Educators attribute this pattern to intentional recruitment efforts and the presence of female computer science teachers, particularly in middle school, where access has historically been more consistent due in part to the availability of full-time computer science teachers. Despite this progress, leaders emphasized the need for continued attention to recruitment and scheduling practices to sustain participation beyond introductory courses.

Exhibit 4. Oakland USD Computer Science Course Enrollment by Gender

Gender	Overall enrollment 2023–24	Computer science enrollment						
		2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25
Female	48%	43%	40%	41%	40%	39%	43%	43%
Male	52%	57%	60%	59%	60%	61%	57%	57%

Source: CALPADS, Oakland USD Department of Research, Assessment, and Data

Exhibit Reads: In 2024–25, 48% of students in Oakland were female. In 2023–24, 43% of students enrolled in a computer science course in Oakland were female.

In Oakland USD, professional learning supported through the Educator Workforce Investment Grant in Computer Science (EWIG: CS) played a targeted but important role in building teacher capacity for computer science instruction. District leaders described Summer of CS and related offerings as

“
**Summer of CS super helpful . . .
it changed my perspective on
how to approach [AP Computer
Science Principles] lessons.**
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especially valuable after county offices stopped providing Code.org training, making EWIG: CS one of the few available avenues for curriculum-aligned computer science professional development. Most Oakland participants used EWIG: CS to access Code.org training, which supported inexperienced computer science teachers and reinforced instructional strategies focused on engagement and problem solving.

Teachers also reported that EWIG: CS workshops helped them rethink how to design lessons for diverse learners and provided opportunities to connect with peers beyond the district. For a small central computer science team, this external professional development also reduced the burden of providing instructional support internally. Nevertheless, district leaders expressed concern about the sustainability of this support due to uncertainty about whether comparable training opportunities will be available once EWIG: CS funding ends.



The Path Ahead

Looking ahead, Oakland USD leaders are focused on strengthening coherence and expanding equitable access to computer science across grade levels. A key priority is developing a more intentional elementary computer science strategy, potentially through targeted professional development and small-scale pilots, after earlier plans stalled due to funding constraints. At the secondary level, leaders aim to expand access at high schools that currently offer no computer science—many of which serve predominantly Black and Hispanic student populations—while maintaining or stabilizing middle school offerings through flexible staffing approaches. The district also plans to continue advancing curriculum in emerging areas such as AI, data science, robotics, and physical computing, reflecting changes in industry and student interest. Recruitment remains a focus, with leaders emphasizing the importance of teacher referrals, counselor engagement, and peer outreach, alongside investments in classroom equipment and infrastructure to ensure reliable instruction. One vehicle for raising awareness and fostering the growth of community partnerships is a districtwide STEM fair, which is expanding to a larger venue to showcase student projects and external collaborations.

“
**AI is here. Data Science isn’t
happening in other districts, but
it is happening here.**
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The American Institutes for Research (AIR) has produced this case study as part of its evaluation of California’s Educator Workforce Investment Grant in Computer Science (EWIG: CS). It is one of six case studies designed to illustrate the contextual details, strategies, successes, and challenges that shape efforts to expand computer science education in the state. For more information on the AIR evaluation, including additional findings about the EWIG: CS grant, please visit <https://www.air.org/project/evaluation-educator-workforce-investment-grant-computer-science>



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