



Washington Office of Superintendent of **PUBLIC INSTRUCTION**

Computer Science/Education Grant

1. **Purpose:**

The Computer Science (CS) Education grant supports the following three purposes: train and credential teachers in computer science; provide and upgrade technology needed to learn computer science; and, for computer science frontiers grants, to introduce students to and engage them in computer science.

2. **Description of services provided:**

Grants provided for the purpose of introducing students to computer science supported innovative ways to engage students from historically underrepresented groups, including girls, low-income students, and minority students, to computer science and to inspire them to enter computer science careers. This includes teacher training, technology, and services such as coding robots and curriculum, and systemic programs that enable districts to offer computer science classes.

3. **Criteria for receiving services and/or grants:**

Districts, schools, skill centers, state-tribal educational compact schools (STECs), and Educational Service Districts (ESDs) that demonstrate readiness; non-profit organizations in partnership with a school district, school or ESD; institutions of higher education in partnership with a school district, school, or ESD could apply for grants. Institutions of higher education could also apply to train and credential teachers in computer science. Funds for the computer science and education grant program may be expended only to the extent that they are equally matched by private sources for the program, including gifts, grants, or endowments. Engagement of underserved student populations is emphasized. Underserved student populations include: (1) economically disadvantaged students; (2) students from major racial and ethnic groups; (3) students with disabilities; (4) students with limited English proficiency (the federal term); (5) girls; and (6) students in alternative education.

Beneficiaries in the 2022-23 School Year:

All amounts are approximate since some grantees such as AESD and West Sound STEM Network impact a large geographic with many schools and districts included.

Number of School Districts:	110
Number of Schools:	80
Number of Students:	51,989
Number of Educators:	3,967
Other:	AVID Center, CodeHS, Skill Struck, ESD 112, ESD 113, West Sound STEM Network



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4. Are federal or other funds contingent on state funding?

No

5. State funding history:

Fiscal Year	Amount Funded	Actual Expenditures
2023	\$1,000,000	\$948,944
2022	\$1,000,000	\$955,158
2021	\$1,000,000	\$995,568
2020	\$1,000,000	\$999,667
2019	\$1,000,000	\$987,648

6. Number of beneficiaries (e.g., school districts, schools, students, educators, other) history:

Fiscal Year	Number of Schools
2023	80
2022	45
2021	220
2020	200
2019	110
2018	82

7. Programmatic changes since inception (if any):

N/A

8. Program evaluation or evaluation of major findings:

Many schools and districts found success in the planning and implementation of CS programs. Trainings such as the CSforAll SCRIPT training and the professional development for Exploring Computer Science provided by ESD 113 were found to be overwhelmingly positive experiences for participants. There was an increase in understanding and engagement with the Washington State Computer Science Standards as well as teacher comfort in integrating the standards. Many elementary schools worked on CS integration with project-based learning (PBL) to maximize student engagement with standards and critical thinking.

Schools that already had a trained, knowledgeable, or enthusiastic teacher prepared to teach CS found that buying technology such as desktop computers, robotics kits, and curriculum-paired hardware piqued student interest and allowed them to implement higher level



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courses for which they previously would not have been able to afford the technology. Grantees noted the absolute need for materials such as computers and robotics to have a complete implementation.

Schools and partners both noted that almost every teacher currently practicing has little to no experience with coding and thus are apprehensive to engage with students in learning computer science. Programs such as the SCRIPT: Strategic CSforALL Planning Tool for School Districts and other trainings developed by grantees greatly increased teacher and system-level confidence in creating CS programs.

Overall, the program increased readiness and capacity for CS instruction at all levels of education from district leadership to student engagement. Because the grant targeted schools that serve underrepresented populations and asked schools to focus on equity, more rural and districts that serve students from low-income backgrounds were given access to CS. Elementary and middle schools often found that all most if not all students participated in CS offerings and were excited to learn more.

9. **Major challenges faced by the program:**

1. **Funding:** Having dedicated funding of \$1M annually through this grant provides a direct avenue for financial support CS education in our state. That said, there are 295 school districts across which these funds may be distributed with small schools representing most of the schools in need. Recipients of the grant make great strides with the funding provided, but at a state level this is insufficient to meet all needs to expand access to high quality CS education at the rate needed. This need comes from legislation, industry demand, student interest, diversity and equity concerns, and overall understanding of nascent skills and tools such as programming, digital literacy, and generative artificial intelligence.
2. **CS Educators:** Given that an individual who qualifies to teach CS, especially at higher grade levels, has the qualifications for many higher-paying jobs in the technology industry, teacher attraction and retention is an ever-present challenge for CS education. Finding existing teachers who are excited about learning and teaching CS is another struggle. At the elementary level, educators have expressed interest in the CS specialty endorsement, but there is currently no preparation program for the endorsement as there is for secondary CS.



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10. **Future opportunities:**

This grant is designed to be utilized over multiple years assuming recipients are awarded each year. Successes and lessons learned may be built upon with continued funding. The fact that this grant is annually provided makes assurance of sustainable support difficult, but nonetheless awardees are able to improve hardware capabilities, teacher training and capacity, and student participation.

Equitable and meaningful CS participation consists of many components, such as a diverse educator workforce, culturally responsive curriculum, teacher training for inclusive practices, and increased options for CS engagement. For lower-resourced schools, creative approaches to integrating CS may be necessary, such as summer courses, coding clubs, or virtually connecting multiple schools with one instructor.

11. **Statutory and/or budget language:**

\$1,000,000 of the general fund—state appropriation for fiscal year 2022 and \$1,000,000 of the general fund—state appropriation for fiscal year 2023 are provided solely for the computer science and education grant program to support the following three purposes: Train and credential teachers in computer sciences; provide and upgrade technology needed to learn computer science; and, for computer science frontiers grants to introduce students to and engage them in computer science. The office of the superintendent of public instruction must use the computer science learning standards adopted pursuant to chapter 3, Laws of 2015 (computer science) in implementing the grant, to the extent possible. Additionally, grants provided for the purpose of introducing students to computer science are intended to support innovative ways to introduce and engage students from historically underrepresented groups, including girls, low-income students, and minority students, to computer science and to inspire them to enter computer science careers. The office of the superintendent of public instruction may award up to \$500,000 each year, without a matching requirement, to districts with greater than fifty percent of students eligible for free and reduced-price meals. All other awards must be equally matched by private sources for the program, including gifts, grants, or endowments.

12. **Other relevant information:**

OSPI publishes a data report annually on high school CS data. Middle school data is not required, and elementary data is non-existent outside anecdotal evidence, which is its own challenge. The following data points from the 2022 report illustrate a few ways in which CS education is in need of improvement in the state:



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- 47% of high schools in Washington have a CS elective, yet RCW 28A.230.300 requires one by 2023.
- 87% of CS educators identify as white and 56% identify as male, which does not reflect the broader student population.
- 71% of students participating in CS coursework identify as male, which is consistent with overall trends in the gender gap in technology that continues to lack non-male representation.
- Within student ethnicities, Asian students are most prominently participating in CS coursework at 16.1% of the Asian student population. The percentages for the remaining ethnicities range from 5–8%, which does not reflect the broader student population.
- 41% of students participating in CS coursework are low-income, and 10% are students with disabilities.
- Nearly all (about 95%) of high school CS courses are CTE, meaning CS teacher job listings often require CTE certification, meaning the secondary CS endorsement is not valued as much as CTE.

Diversity and general CS participation efforts must begin at the elementary level in a holistic K–12 CS program if we are to influence high school, university, and career demographics meaningfully long-term. Extra support is needed in small schools and rural areas.

There is a CS lead in each ESD that handles CS concerns in their respective region and coordinates with OSPI partly through this grant funding. The CS lead positions are all part-time which limits the extent to which each lead may support their ESD.

13. **Schools/districts receiving assistance:**

[preliminaryfy23state-fundedprovisograntawardsupdated-42823.xlsx \(live.com\)](#)

14. **Program Contact Information:**

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