How to Grow CS Education at your District/School

Lawrence Tanimoto
Treasurer, CSTA Washington

Lawrence Tanimoto

- Treasurer, CSTA Washington
- Currently Retired
- Teacher (CTE) at Ingraham High School in north Seattle from 2014-2021
- 28 years in international computer industry last 18 with Microsoft

[Member Spotlight: Lawrence Tanimoto - CSTA Washington]

CSTA Washington

- Computer Science Teachers Association

- Merger of 4 CSTA chapters in Washington
  - Puget Sound
  - Central Washington
  - Mid-Columbia
  - Spokane

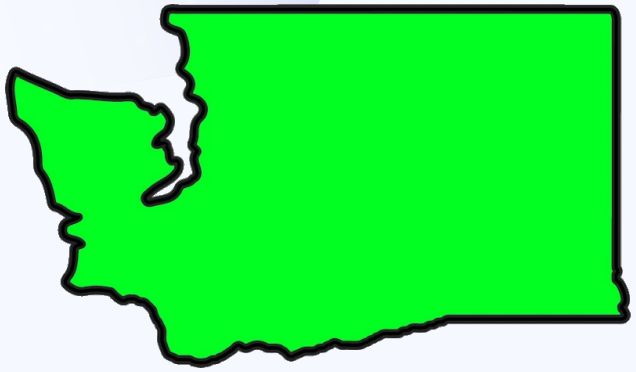
- Provide community, professional development, and advocacy for Washington educators to help them deliver equitable, engaging, high-quality CS education for all K-12 students that ensures responsible technology creation and use so that everyone can thrive in a world powered by computing

Join CSTA Washington

Discounts Available

- Live, in-person events
- Virtual Events and Community
- Professional Development
- Website (https://cstawa.org)
- Monthly Newsletter
- WA State Clock Hours
- Moral and Professional support

https://tinyurl.com/join-cstawa26



State of CS Education Washington

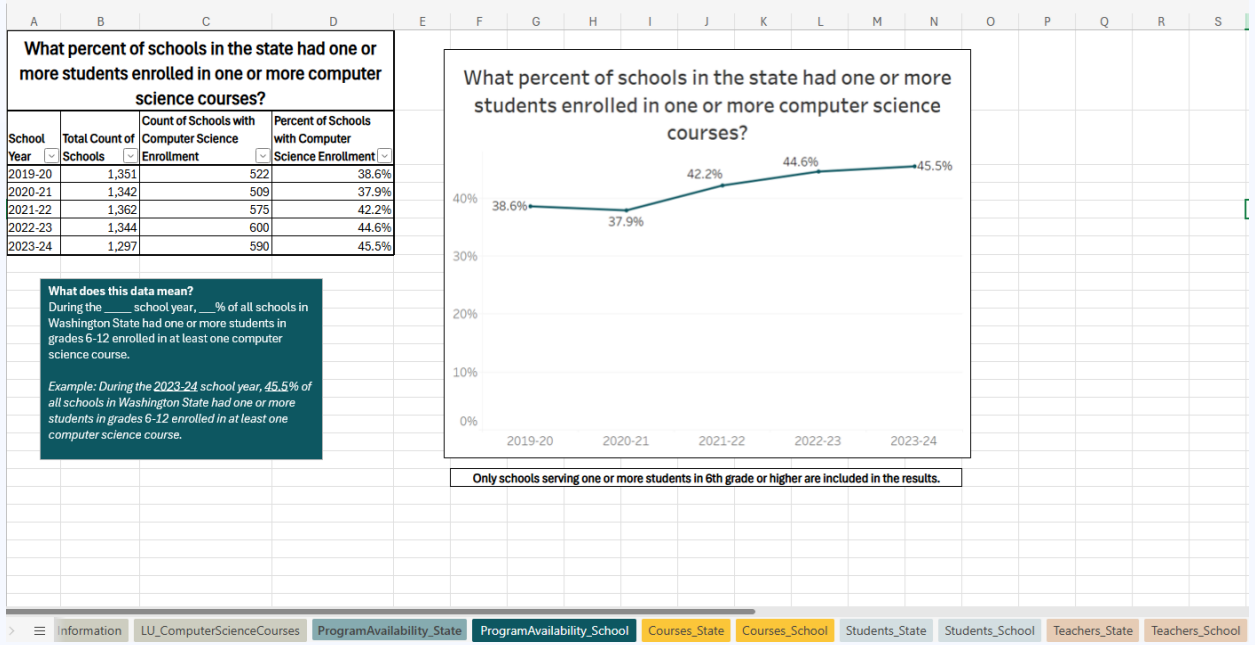
2023-24

Primary Data Source

https://ospi.k12.wa.us/student-success/resources-subject-area/computer-science

2023-24 K–12 Computer Science Education Data Summary Report

OSPI CSEd Data Summary Report



What percent of schools in the state had one or more students enrolled in one or more computer science courses?

School Year	Total Count of Schools	Count of Schools with Computer Science Enrollment	Percent of Schools with Computer Science Enrollment
2019-20	1,351	522	38.6%
2020-21	1,342	509	37.9%
2021-22	1,362	575	42.2%
2022-23	1,344	600	44.6%
2023-24	1,297	590	45.5%

What does this data mean?
During the _____ school year, __% of all schools in Washington State had one or more students in grades 6-12 enrolled in at least one computer science course.

Example: During the 2023-24 school year, 45.5% of all schools in Washington State had one or more students in grades 6-12 enrolled in at least one computer science course.

Only schools serving one or more students in 6th grade or higher are included in the results.

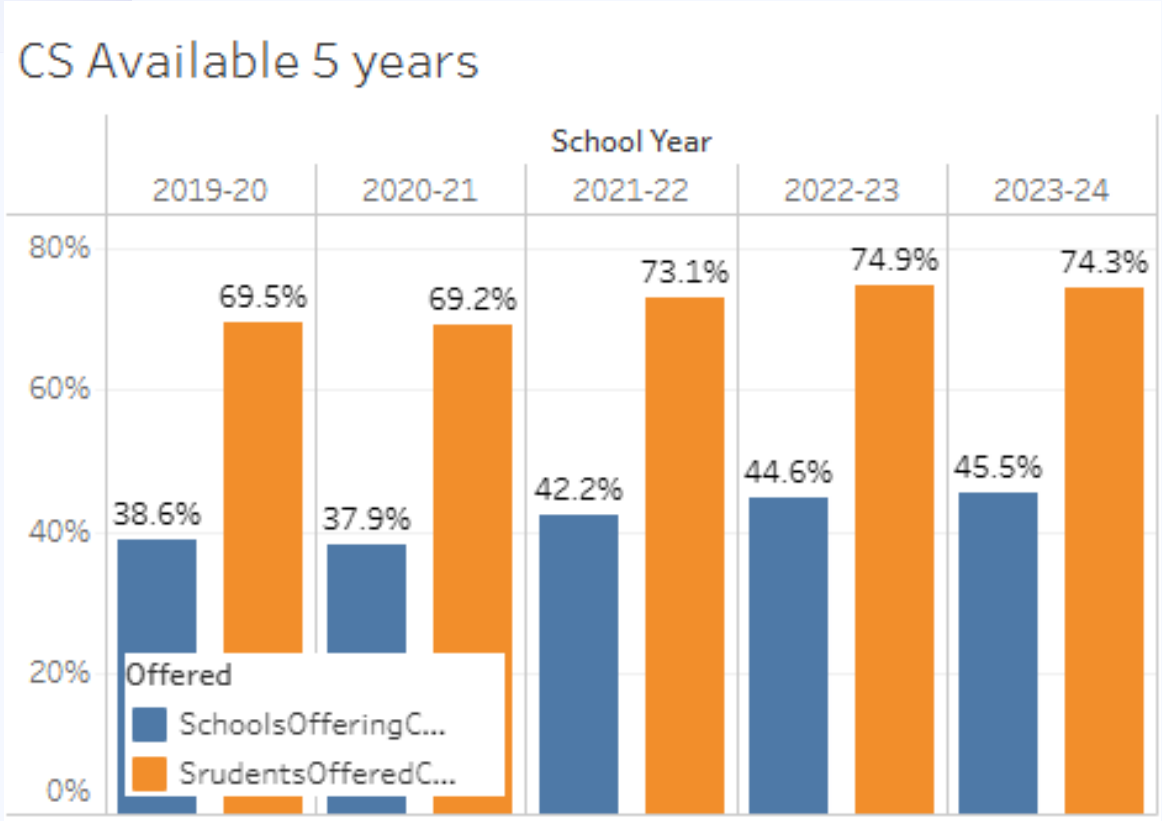
- Most comprehensive source of K-12 CSEd data **for any state**
- HB 1577 (2019)
- June 2025 report covers 5 years SY 2019-2020 to SY 2023-24
- All schools with at least one grade 6-12
- Mostly a series of Excel data tables
- Only one chart

2023-24 K–12 Computer Science Education Data Summary Report

Washington CSEd Analytics Project

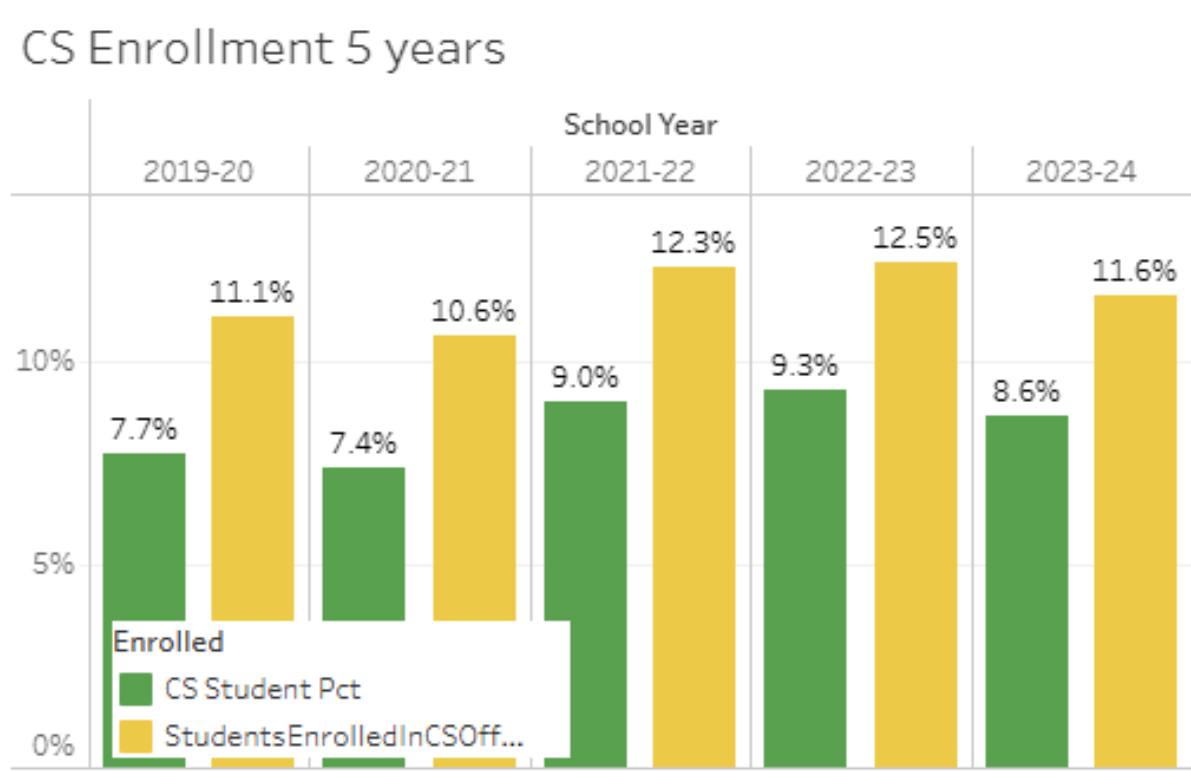
- Overall Project Description
- Goals
  - Enable readers to visualize the wealth of data in the 2023-24 K–12 Computer Science Education Data Summary Report
  - Make it easier for ESDs, school districts, and individual schools and teachers to utilize this data to improve computer science education
  - Offer some simple analysis and key takeaways from the data
- Provide similar capabilities on CTE (Career and Technical Education) data as substantial majority of CS courses in Washington taught as CTE

CS Course Availability



- % of schools offering CS (at least one student enrolled) continued upward movement in 2023-24 (44.6% -> 45.5%)
- % of students in these schools offering CS slight downward trend (74.9% -> 74.3%)

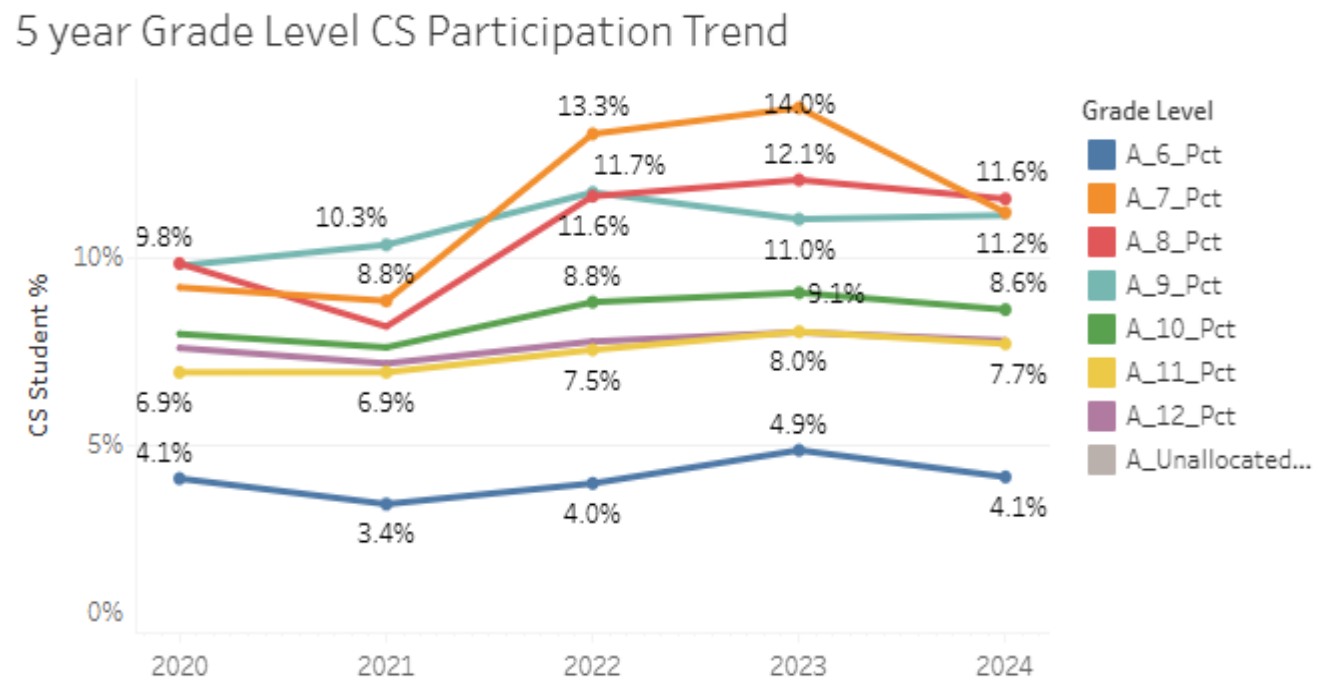
CS Student Enrollment



SY 2023-24 downtrend

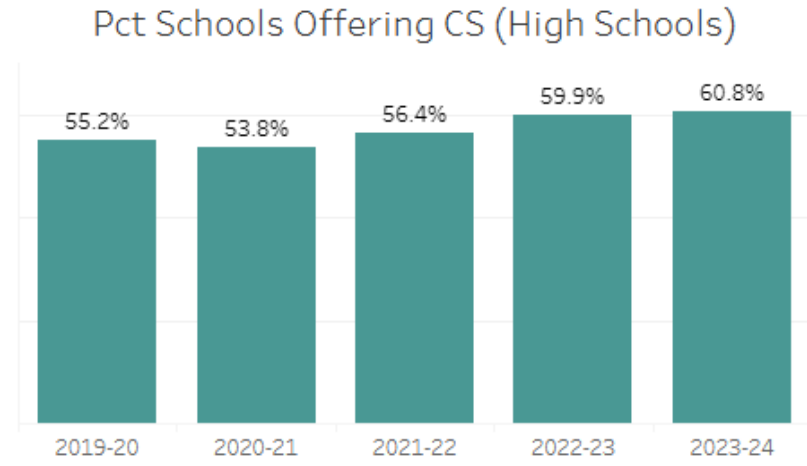
- **% of students enrolled in CS (9.3% to 8.6%), and**
- **% of students enrolled in CS in schools offering CS (12.5% to 11.6%)**

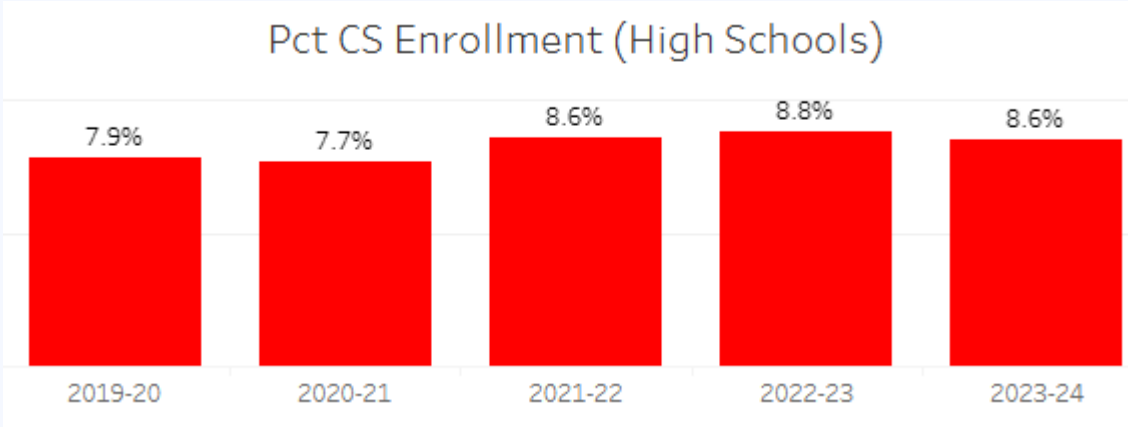
Grade Level

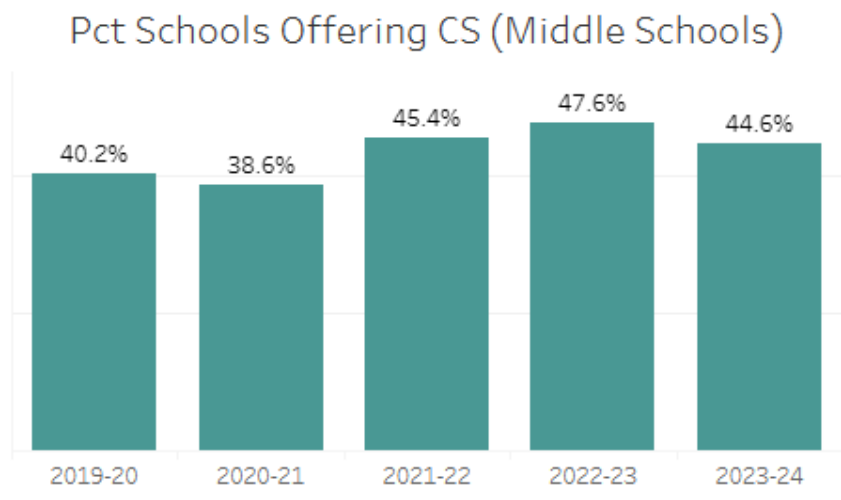


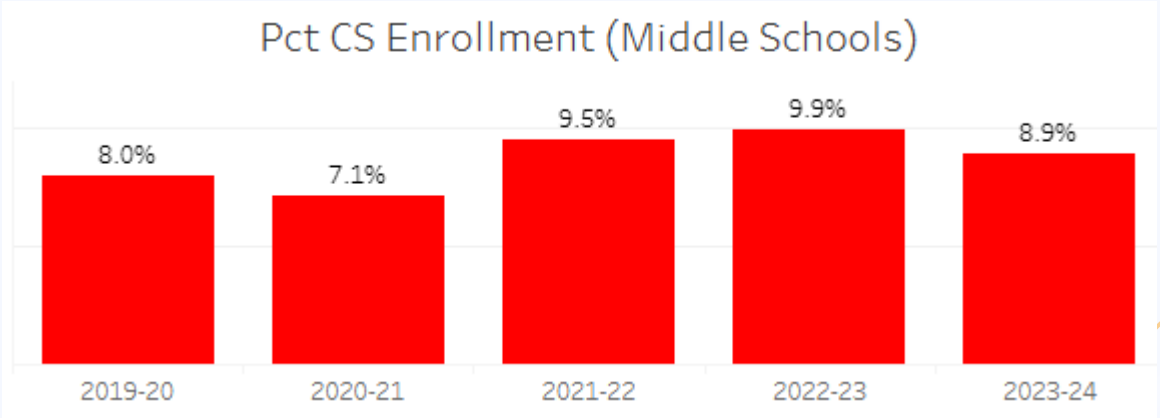
- CS Student % is highest in 7th, 8th, and 9th and goes down in higher grades
- Drop in CS Student % in SY 2023-24 most from drops in middle school grades

High School vs Middle School









National Comparisons

Metric	National	Washington
CS Available School Percentage	60%	51% / 46%
CS Available Student Percentage	N/A	74.3%
CS Student Participation	6.1%	4.5% / 8.6%
CS Student Participation for Students w/ Access	N/A	11.6%
Gender Relative Participation	50.6%	49.2%
Race Relative Participation	72.7%	93.2%
Income Relative Participation	54.4%	95.6%
ELL Relative Participation	60.9%	101.2%
SWD Relative Participation	63.0%	85.7%

For definitions and calculations on this table, see KPI for CS Education in Washington 2023-24 on CSTAWA.org

Washington CS and CTE Education Analytics 2025

https://www.cstawa.org/washington-cs-and-cte-education-analytics-2025/

Updated from 2022-23

Washington CSEd Enrollments 2019-24

- Percentage of schools offering CS
- Percentage of students offered CS
- Percentage of students enrolled in CS

Drilldowns by ESD, by school district, by school, and by school type.

Washington CSEd Demographics 2019-2024

Percentage of students enrolled in CS changed statewide in various demographic groups

- by gender,
- by race/ethnicity,
- by income
- by English Language Learner status
- by disability status
- by grade level

Drilldown dashboard has better data for comparison purposes

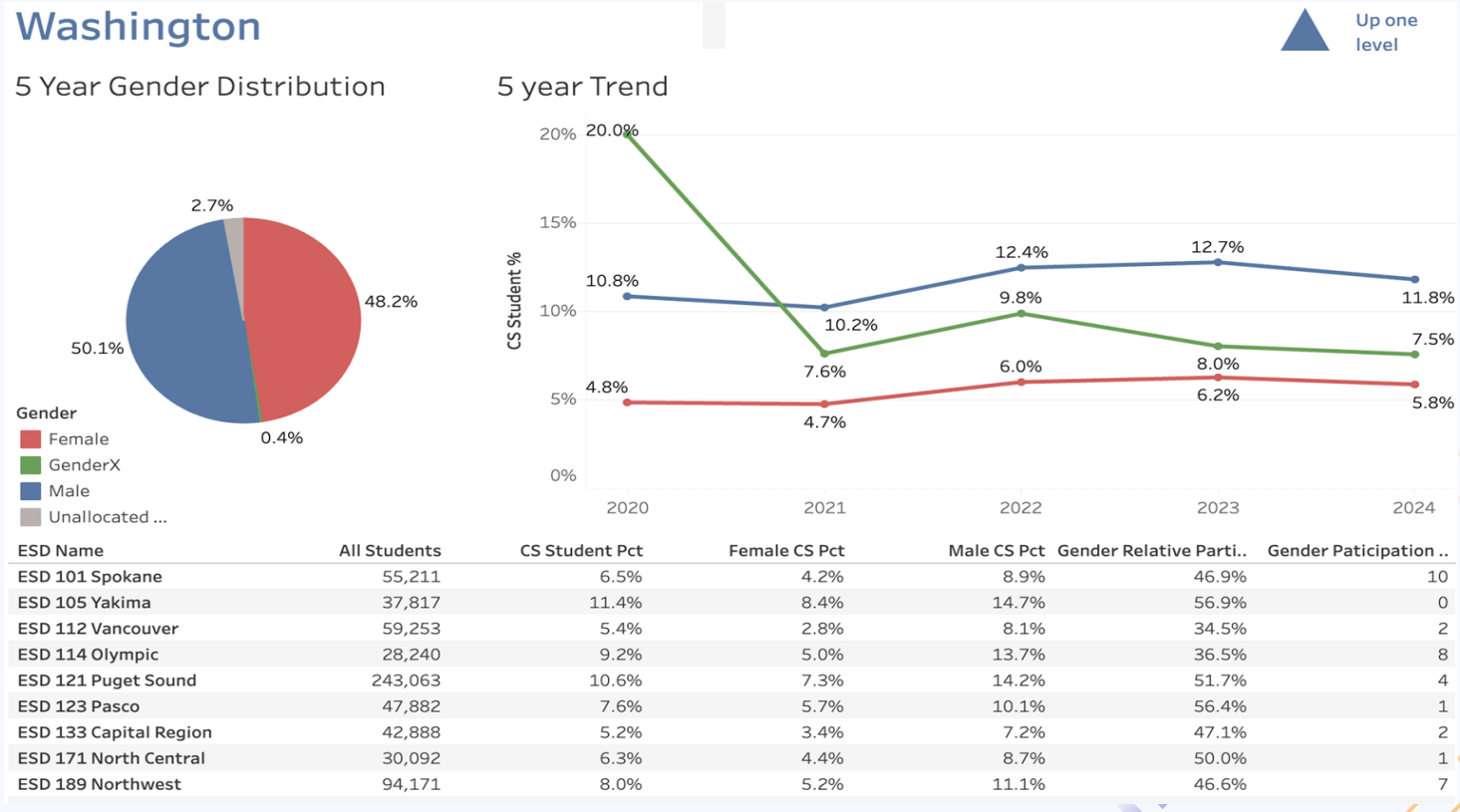
CS Education in Washington Demographic Drilldown 2019-24

CSEd participation rates in Washington by

- Overall CS enrollments,
- Gender
- Race/Ethnicity,
- Income,
- ELL status
- Disability status
- Grade level.

Drilldown by

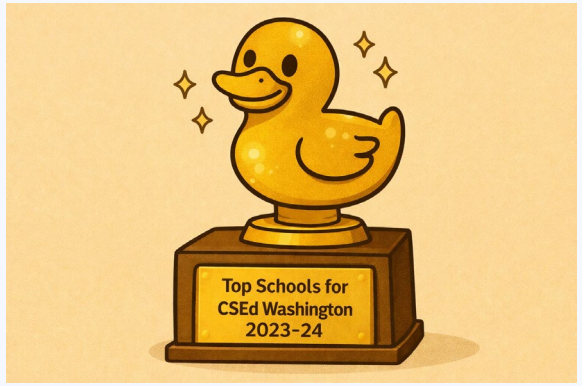
- ESD in State
- Districts in ESD
- Schools in District



ESD Name	All Students	CS Student Pct	Female CS Pct	Male CS Pct	Gender Relative Parti..	Gender Patication ..
ESD 101 Spokane	55,211	6.5%	4.2%	8.9%	46.9%	10
ESD 105 Yakima	37,817	11.4%	8.4%	14.7%	56.9%	0
ESD 112 Vancouver	59,253	5.4%	2.8%	8.1%	34.5%	2
ESD 114 Olympic	28,240	9.2%	5.0%	13.7%	36.5%	8
ESD 121 Puget Sound	243,063	10.6%	7.3%	14.2%	51.7%	4
ESD 123 Pasco	47,882	7.6%	5.7%	10.1%	56.4%	1
ESD 133 Capital Region	42,888	5.2%	3.4%	7.2%	47.1%	2
ESD 171 North Central	30,092	6.3%	4.4%	8.7%	50.0%	1
ESD 189 Northwest	94,171	8.0%	5.2%	11.1%	46.6%	7

Tableau Public link

Additional Reports

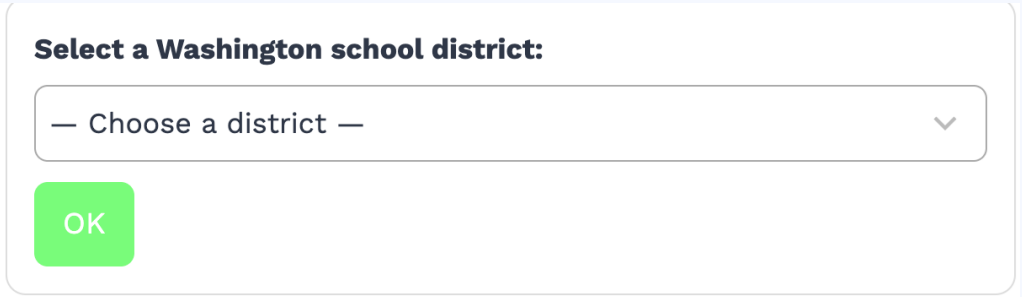


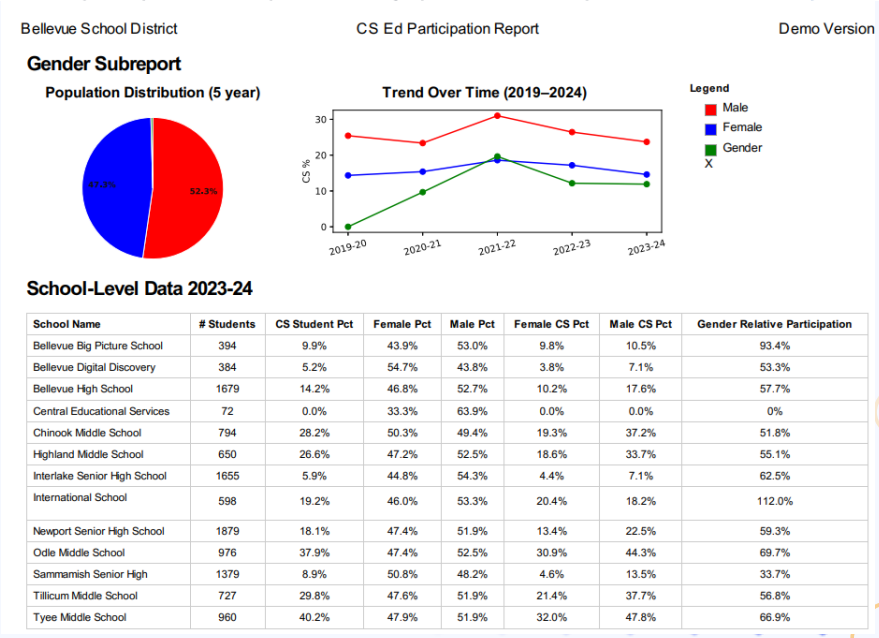
- Top Schools and Districts for CSEd 2023-24
  - District: Wahluke School District (37.1%)
  - High School: Nikola Tesla STEM High School (61.9%)
  - Middle School: Wahluke Junior High (87.8%)
  - Small School: Rooted School Washington (100%), Washington Youth ChalleNGe Academy (100%)
- Top Schools and Districts for Girls in CSEd 2023-24
  - District: Granite Falls School District (104.8%)
  - High School: Connell High School (151.9%)
  - Middle School: International School (112.0%)

Washington CS Education PDF District Reports 2019-24

For each school in a district, provide CS education participation rates in PDF format by:

- Overall CS enrollments,
- Gender
- Race/Ethnicity,
- Income,
- ELL status
- Disability status
- Grade level.




Bellevue School District CS Ed Participation Report Demo Version

Gender Subreport

Population Distribution (5 year)

Trend Over Time (2019–2024)

School-Level Data 2023-24

School Name	# Students	CS Student Pct	Female Pct	Male Pct	Female CS Pct	Male CS Pct	Gender Relative Participation
Bellevue Big Picture School	394	9.9%	43.9%	53.0%	9.8%	10.5%	93.4%
Bellevue Digital Discovery	384	5.2%	54.7%	43.8%	3.8%	7.1%	53.3%
Bellevue High School	1679	14.2%	46.8%	52.7%	10.2%	17.6%	57.7%
Central Educational Services	72	0.0%	33.3%	63.9%	0.0%	0.0%	0%
Chinook Middle School	794	28.2%	50.3%	49.4%	19.3%	37.2%	51.8%
Highland Middle School	650	26.6%	47.2%	52.5%	18.6%	33.7%	55.1%
Interlake Senior High School	1655	5.9%	44.8%	54.3%	4.4%	7.1%	62.5%
International School	598	19.2%	46.0%	53.3%	20.4%	18.2%	112.0%
Newport Senior High School	1879	18.1%	47.4%	51.9%	13.4%	22.5%	59.3%
Odle Middle School	976	37.9%	47.4%	52.5%	30.9%	44.3%	69.7%
Sammamish Senior High	1379	8.9%	50.8%	48.2%	4.6%	13.5%	33.7%
Tillicum Middle School	727	29.8%	47.6%	51.9%	21.4%	37.7%	56.8%
Tyee Middle School	960	40.2%	47.9%	51.9%	32.0%	47.8%	66.9%

https://www.cstawa.org/demo-washington-cs-education-pdf-district-reports/

Washington Computer Science Courses 2019-24

The types of computer science courses (with estimation of #students taught. Drilldowns available:

- Statewide
- By ESD
- By District

Also, what percentage of these courses are taught as CTE

Categories: Core CS, Cybersecurity, Data Science, Databases, Information Systems, Information Technology, Media Programming, Networking, Robotics, Software Development, and Web Page Design

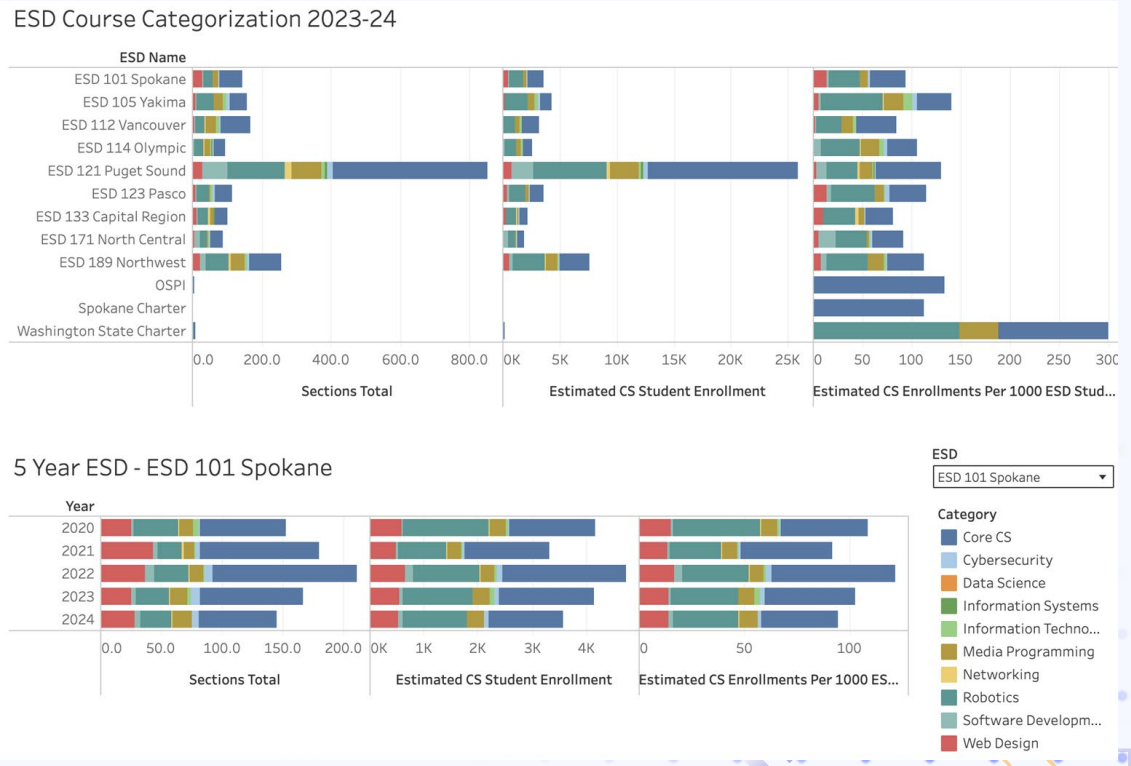


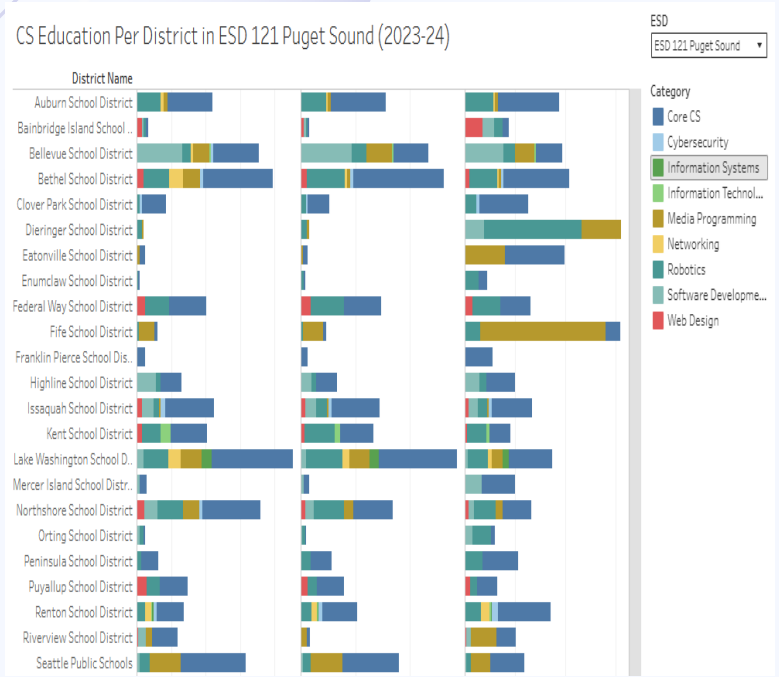
Tableau Public link

CS Course Growth Rates

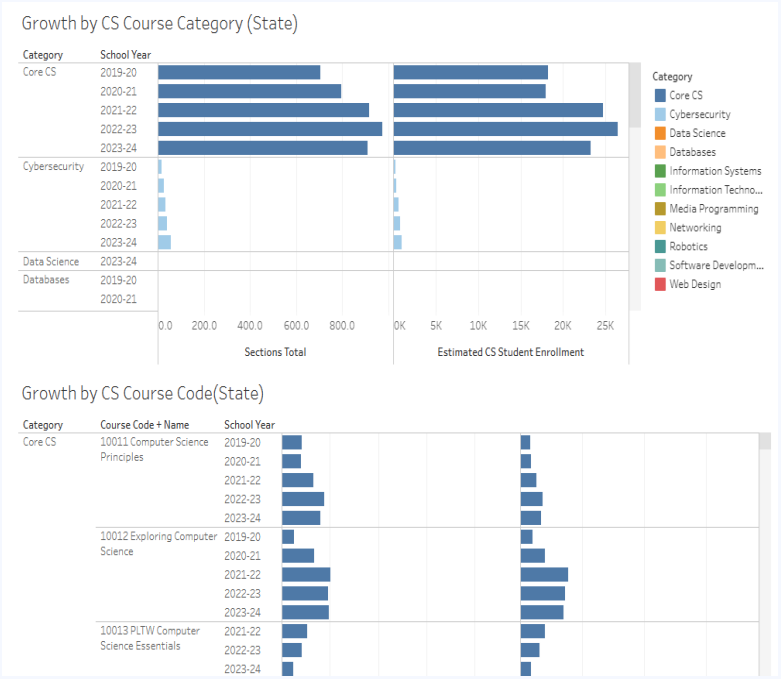
- Top 3 course categories: Core CS – 45%, Robotics – 23%, Media Programming – 12%
- Annual Growth Rates 2019-24, Core CS - 6.6%, Robotics – 0.9%, Media Programming - 8.4%
- Robotics much more prevalent in middle school (36.6%) than in high school (13.8%)
- Cybersecurity has established a foothold with annual growth of 36.0%; Data Science has not
- After Robotics and Computer Programming, AP Computer Science A has third largest number of sections statewide.

https://www.cstawa.org/cs-course-growth-rates-in-washington-2019-2024/

Tactical Support



Comparison with other districts



Growth rates of course categories and courses

Course Name

Cybersecurity

District Name	School Name	
Battle Ground School Dist..	Battle Ground Virtual Aca..	2.0
Bellevue School District	Bellevue Digital Discovery	1.5
Clover Park School District	Clover Park High School	1.0
Ellensburg School District	Ellensburg Choice Schools	1.5
Ephrata School District	Ephrata High School	1.0
Goldendale School District	Goldendale High School	0.5
Highland School District	Highland High School	0.5
Issaquah School District	Skyline High School	0.5
Manson School District	Manson High School	0.7
North Mason School Distr..	North Mason Homelink Pr..	2.0
Northshore School District	Northshore Learning Opti..	1.5
Oak Harbor School District	Oak Harbor Virtual Acade..	0.7
Quillayute Valley School D..	Insight School of Washing..	0.3
Richland School District	Hanford High School	2.0
	Richland High School	1.0
Ridgefield School District	Wisdom Ridge Academy	1.5
Snoqualmie Valley School District	Mount Si High School	1.5
	Snoqualmie Parent Partn..	0.5
Sultan School District	Sultan Virtual Academy	1.0
Sumner-Bonney Lake School District	Bonney Lake High School	1.0
	Sumner High School	1.0
Sunnyside School District	Sunnyside High School	1.0
Tacoma School District	Mount Tahoma High School	2.0
Wenatchee School District	Wenatchee High School	0.5
West Valley School Distric..	West Valley Innovation Ce..	1.7
Yakima School District	Yakima Online	0.5

Other schools teaching your course

Washington CS Teacher Population 2019-24

CS Teachers in Washington 2019 – 2024

- Number of CS teachers
- Total students per CS teacher
- CS students per CS teacher

Drilldowns

- Statewide
- By ESD
- By District

Washington CSEd Teacher Demographics 2019-2024

Changes in CS Teacher Population

- Overall
- By Gender
- By Race/Ethnicity
- Highest Degree
- Years Experience
- In Field Status
- Certification Status

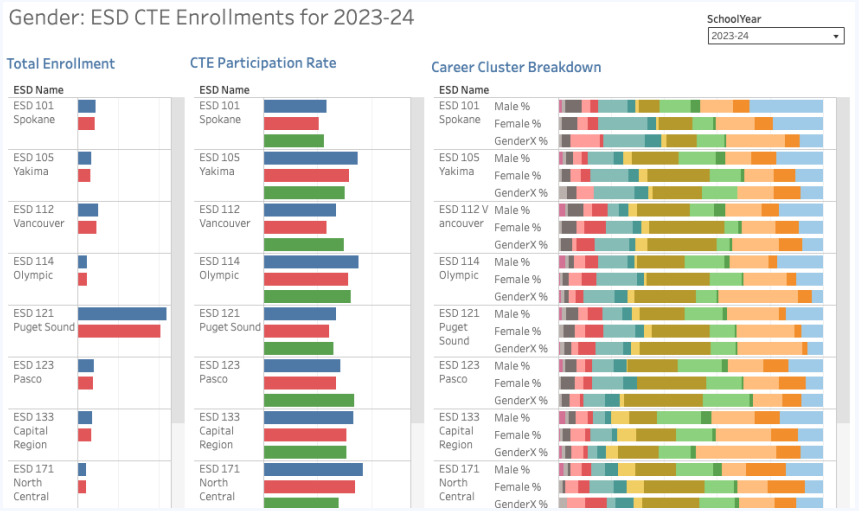
Washington CTE Demographic Drilldown 2019-24

CTE (Career and Technical Education) enrollments:

- Overall
- By gender
- By race/ethnicity
- By income
- By ELL status,
- By disability status

Drilldown:

- Statewide
- Per ESD
- Per district
- Per school.



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Career Clusters (2024): Advanced Manufacturing; Agriculture; Arts, Entertainment and Design; Construction; Digital Technology; Education; Energy and Natural Resources; Financial Services; Healthcare and Human Services; Hospitality, Events and Tourism; Management and Entrepreneurship; Marketing and Sales; Public Service & Safety; Supply Chain and Transportation

See also: Washington CTE Enrollments by Career Clusters

We want your feedback

- Dashboards/reports are feature complete/accurate, but labeled as “Demo”
- Please send feedback to washington@csteachers.org
  - Questions, comments, and bug reports
  - Course categorization
  - Ranking lists
  - Additional features for current dashboards/reports
  - Areas for deeper or separate analysis
  - Other subject areas that deserve similar treatment
- And, if you can, donate to CSTA Washington to support this work

CSTA Washington

Clock Hours, Meetups, And More

Clock Hour Opportunity

- "Homework" to improve CS Education in Your District
- Attend the CSTA Washington Lunch and Learn (virtual) on Saturday, Mar 22, 12:00 – 2:00
  - AI and copyright
  - Engaging the Disengaged—making computer science fun and equitable
  - Brief review: CSTA Washington Analytics
- 3 clock hours available for all three

Lunch and Learn Registration

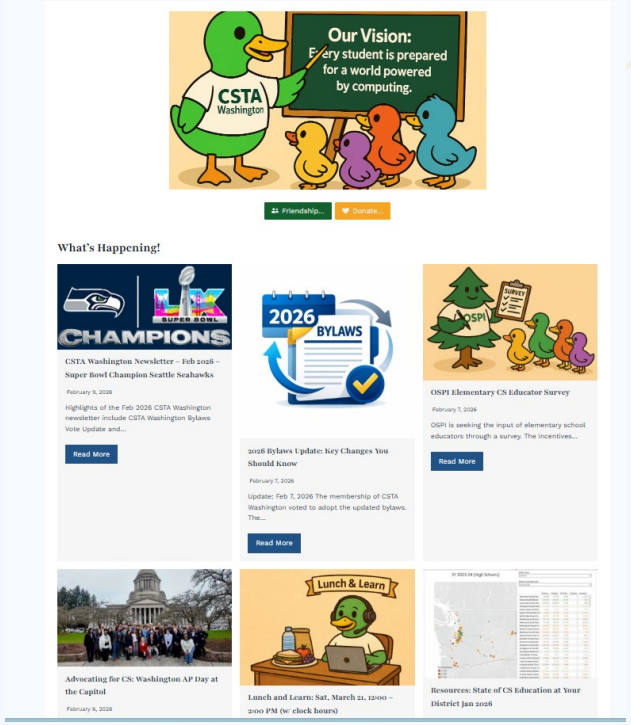
Meetups

- Come Visit Our Booth. Get Your Rubber Duck
- Informal Meetup on Thursday, Mar 26, 5:00 – 7:00 PM RSVP

…And More

- Website and monthly newsletter
- Regional meetups
- Step CS Networking Event at UW on 4/27
- **Join CSTA Washington**
- Or become a friend of CSTA Washington

https://tinyurl.com/join-cstawa26



https://cstawa.org

Thank You

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