



Public Attitudes Toward STEM Education

Key Findings from a Statewide Survey of Registered
Voters in Washington

February 2019

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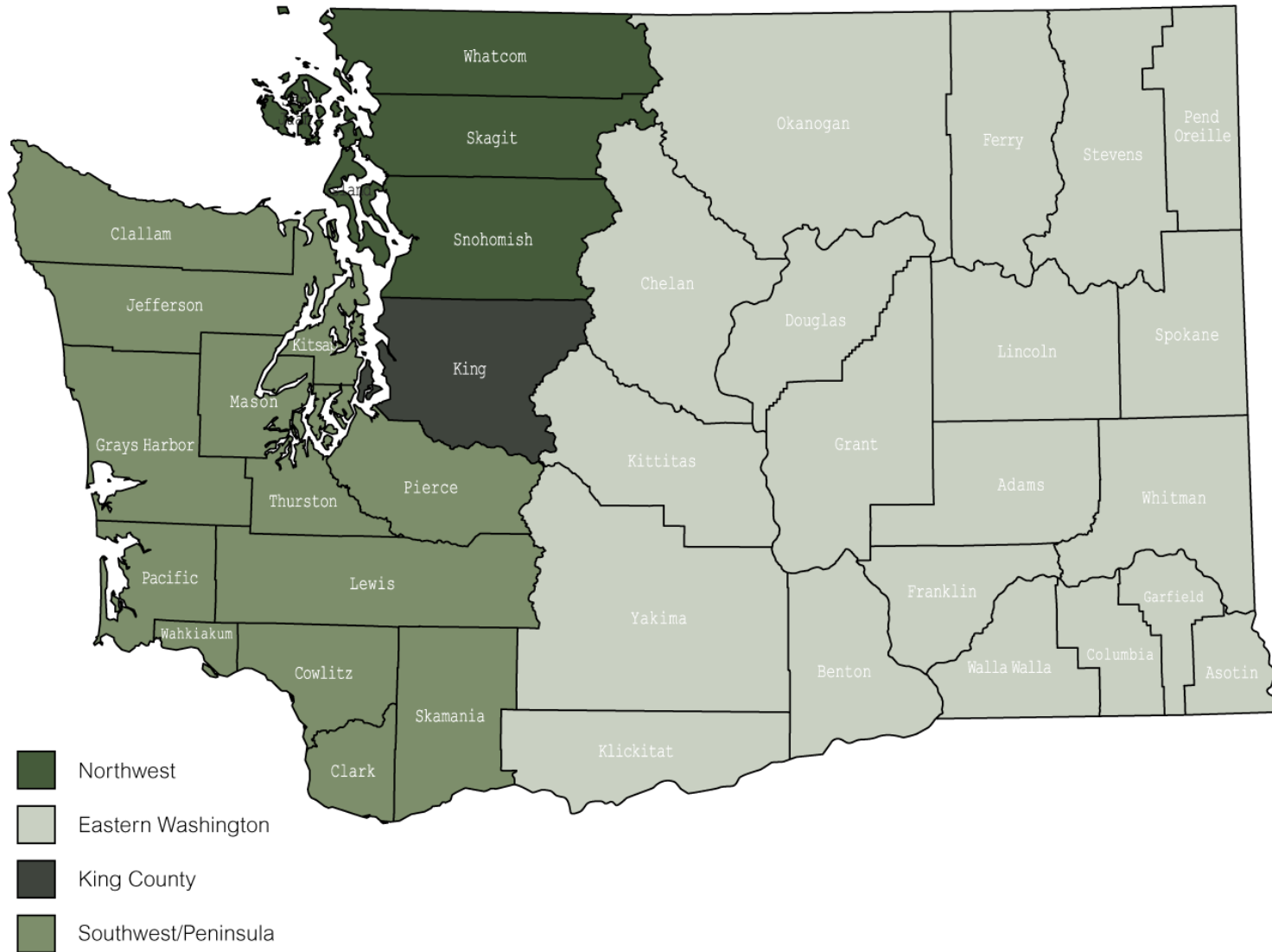
Methodology

METHODOLOGY

Strategies 360 conducted an online survey of **600 registered voters** in Washington.

- ✓ The survey was conducted **February 5-8, 2019**.
- ✓ The **margin of error for a survey of 600 interviews is $\pm 4.0\%$** at the 95% confidence level.
- ✓ The margin of error is higher for demographic subsamples.

REGIONAL DEFINITIONS



Executive Summary

EXECUTIVE SUMMARY | Overview

Washington voters strongly value STEM education and understand its potential to improve both the economy and students' lives. Yet, voters also believe the state could be doing more to capitalize on the benefits of STEM.

- Throughout this survey, voters demonstrate a universal recognition of the importance of STEM education. Voters believe a strong STEM education can improve social mobility, provide students with life skills that are applicable to any career, and improve the economy for the entire state.
- Yet, there is also concern that Washington is not meeting the needs of students or the economy. Satisfaction with STEM education is lackluster and concern about the quality of STEM teachings spans the early childhood, K-12, and higher education levels.
- Fortunately, voters embrace a range of potential solutions to improve STEM education. Among the most popular is expanding access to career-connected learning opportunities, particularly those that emphasize STEM careers and skills.

EXECUTIVE SUMMARY | STEM and Washington's Schools

STEM is becoming a commonly recognized part of the economic and education landscape in Washington. Yet, voters express lackluster satisfaction with the quality of STEM education in the state.

- In 2013, just 32% of voters in Washington said they had ever seen or heard the abbreviation STEM. Now, in 2019, recognition reaches nearly 80%. This increase in familiarity has been realized across the demographic, political, and geographic spectrum.
- However, many voters express concern about STEM education in Washington's schools. Just 42% are satisfied with the job Washington is doing at preparing students for good jobs and opportunities in the state (47% are dissatisfied). Also, just 42% say that Washington provides students with a high-quality STEM education while 33% disagree. When asked whether K-12 teachers are doing a good job teaching STEM subjects, 38% agree while 32% disagree.
- There is more optimism about STEM education in Washington's colleges and universities. However, only a bare majority say the state's high education institutions are doing a good job preparing students for STEM careers.

EXECUTIVE SUMMARY | Early STEM Learning

There is nearly universal agreement that children should to be exposed to early STEM concepts from a young age because it is key to their success later in life. However, voters worry that parents, teachers, and childcare providers are not prepared to support early STEM learning.

- An overwhelming majority (90%) believe children should be exposed to early STEM concepts from a young age. A similar number (85%) say early exposure to STEM concepts is important to students' success in school and in life. These beliefs are held by voters in every area of the state and every demographic subgroup.
- Yet, there is far less confidence that the people in a young child's life are prepared to support their early STEM learning. Just 30% of voters say that preschool teachers and childcare providers are prepared. Similarly, only 28% say parents are prepared. While these concerns are present across the demographic spectrum, men and non-parents are especially concerned that children need more support than they are currently receiving.

EXECUTIVE SUMMARY | STEM and the Economy

Voters see a strong link between STEM education and the economy. Yet, there is opportunity to better educate the public on both the STEM credential gap and the multitude of educational pathways to a good STEM-related job.

- Voters believe that strong STEM skills lead to more opportunities in life (89%), that such skills are in increasing demand in Washington's economy (83%), and that increased focus on STEM education will improve the economy, both for the state overall (81%) and in their region (77%). Further, nearly two-thirds of voters say that most of the jobs that pay a living wage in Washington involve STEM skills.
- While voters intuitively understand the interplay of STEM education and the economy, there are also gaps in awareness and understanding. For example, while most have at least *heard* of the STEM credentials gap, understanding is quite low and a quarter are still completely unaware of the problem. Also, many voters hold the belief that a four-year degree is necessary to find a good STEM-related job, indicating an opportunity to better highlight the breadth of opportunities and pathways into STEM industries and careers.

EXECUTIVE SUMMARY | Career-Connected Learning and Data

Once informed about the scale of the STEM credential gap, voters express urgency for a number of potential solutions, especially career-connected learning (CCL) and data sharing.

- Strong majorities say they support solutions such as working with parents to encourage students to study STEM subjects or changing high school graduation requirements to increase the amount of STEM classes students must take. However, two areas where voters are particularly enthusiastic are CCL and improved data sharing.
- At multiple points during the survey, voters expressed both broad and intense support for CCL. In fact, 94% support more access to CCL at every level of schooling and 88% say they support prioritizing career-connected learning that gives students more exposure to STEM careers and teach STEM skills.
- Similarly, 84% say the state needs to do more to provide students with information about fast growing, high paying jobs in their area (including 49% who feel strongly). Voters also see value in partnering with regional organizations to help inform students about these local economic opportunities.

EXECUTIVE SUMMARY | STEM and Equity

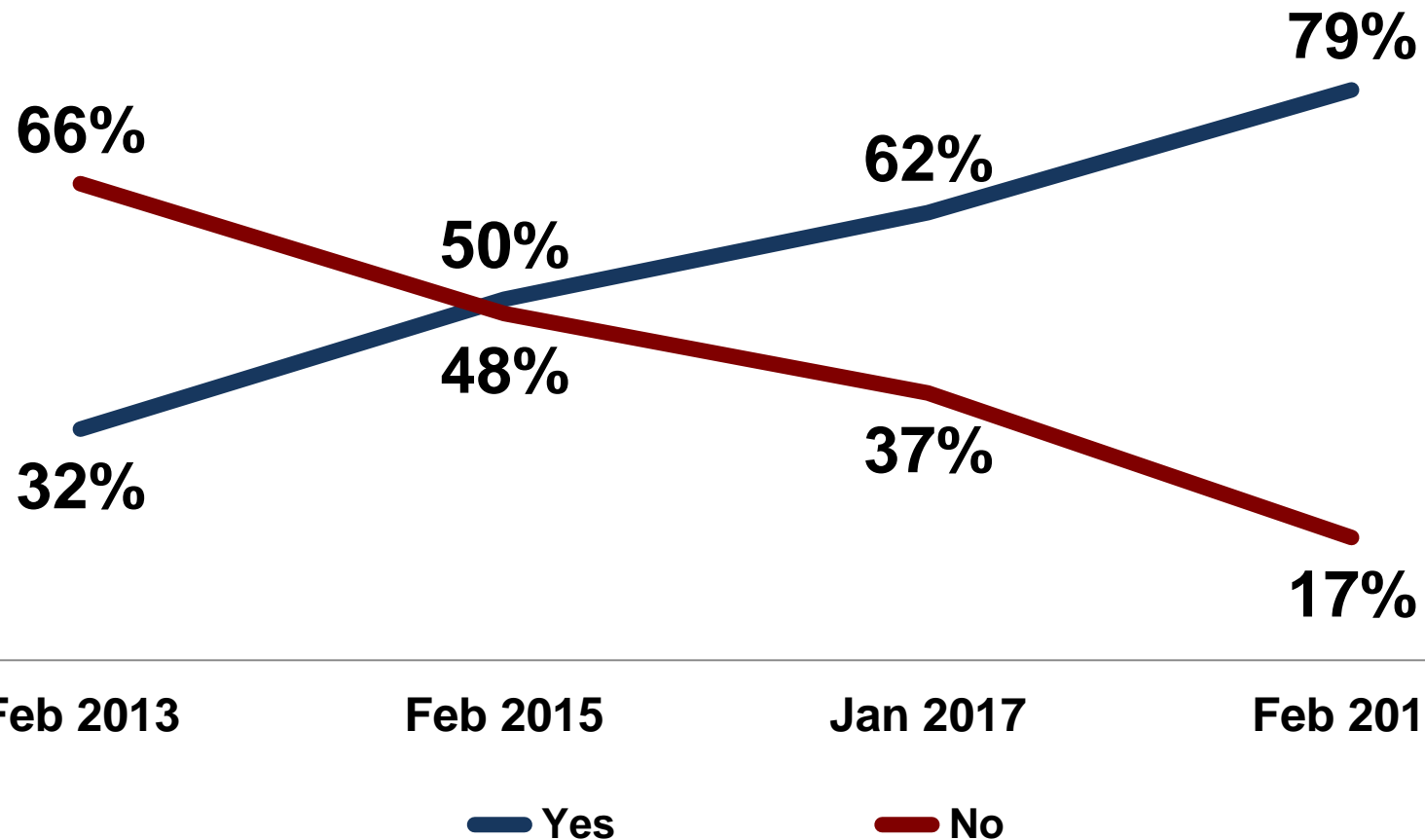
Washington voters place a high priority on equal access to quality STEM schooling and make the connection between STEM skills and social mobility. Yet, there is more work to be done to inform the public about the need for greater diversity in STEM industries and careers.

- Voters clearly understand that students who are equipped with strong STEM skills are better equipped to succeed in the modern economy. As a result, Washingtonians strongly value equity in STEM education: 90% say every child should have access to a high-quality STEM education, including 64% who strongly agree.
- Further, 85% say that children who grew up in poverty have a better chance to break the cycle of poverty if they have a strong STEM education. This belief spans the socio-economic spectrum.
- Yet, recognition of the need for more gender and racial diversity in STEM careers is lagging. While 61% say there are not enough women in STEM careers, almost one-in-five are unsure. Similarly, fewer than half of voters say there are not enough people of color in STEM careers. This highlights several areas for greater education.

Key Findings: **General Attitudes toward STEM Education**

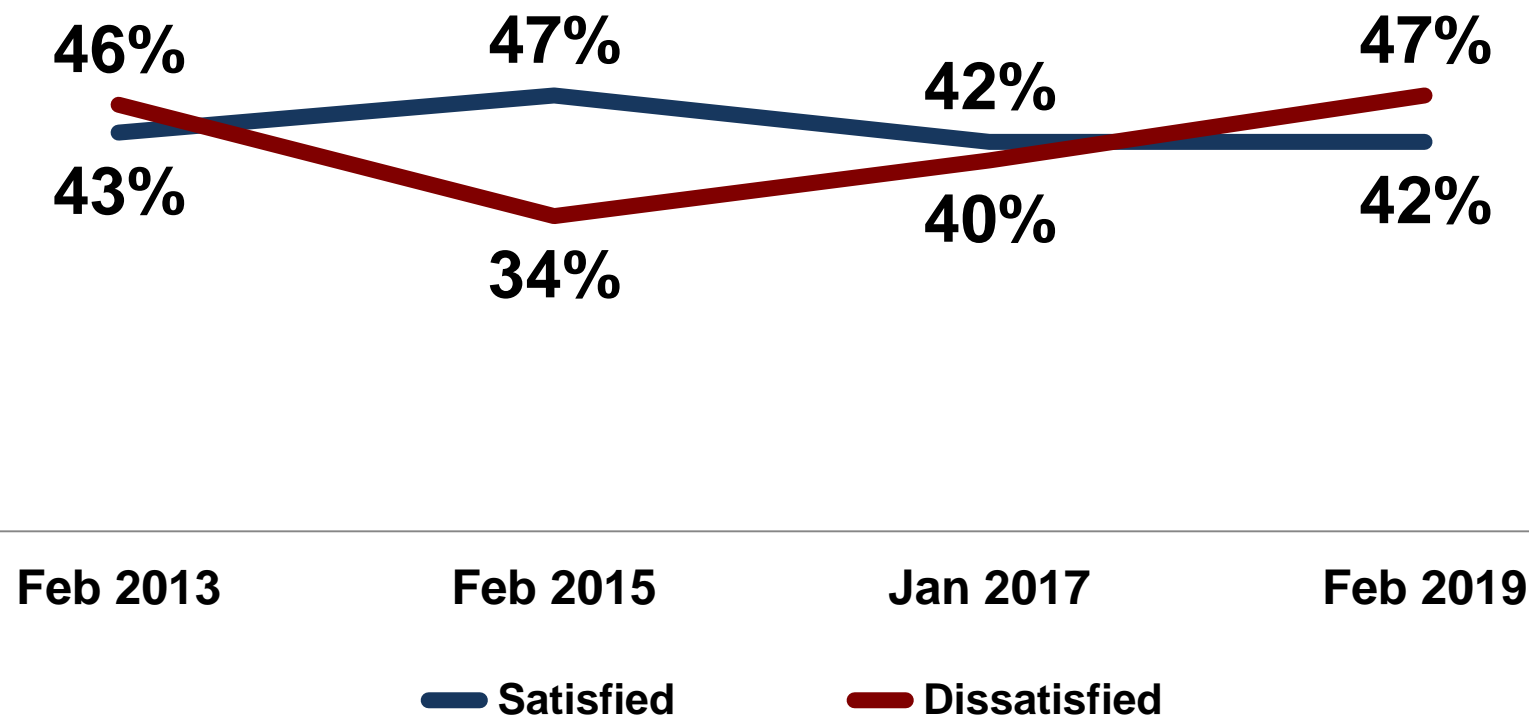
Recognition of the STEM acronym continues to grow by leaps and bounds.

*You will read the abbreviation **STEM** several times throughout this survey. Before today, had you ever seen or heard of the abbreviation STEM, which stands for **S**cience, **T**echnology, **E**ngineering and **M**athematics?*



Voters are divided over whether Washington's public schools are preparing students for good jobs and opportunities in the state.

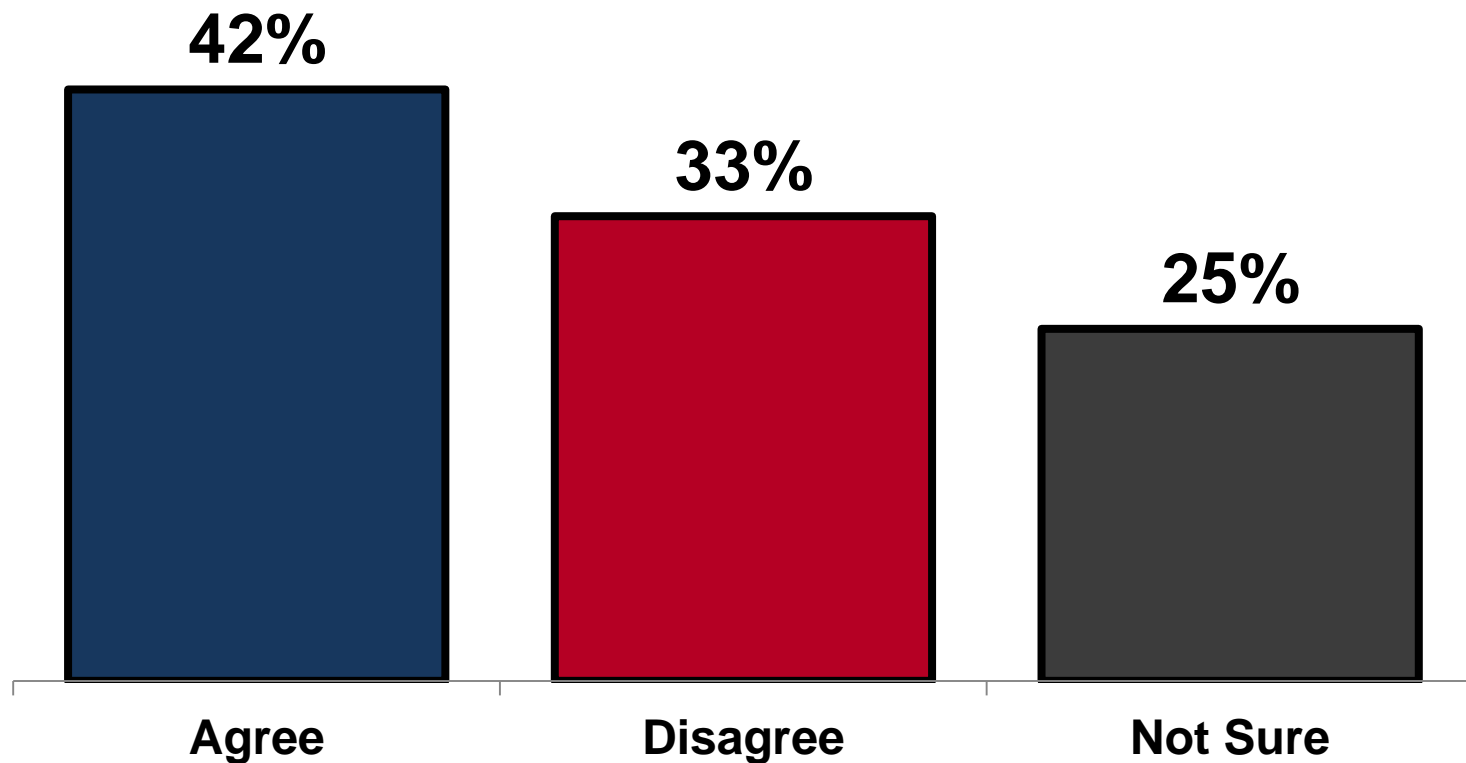
How satisfied would you say you are with the job that Washington's public schools are doing at preparing students for good jobs and opportunities in the state?



While a 42% plurality of voters agree that Washington provides high-quality STEM education, a third disagree. Many are unsure.

Do you agree or disagree with this statement?

Overall, Washington provides students with a high-quality STEM education.



Views on the quality of STEM education in Washington differ significantly by demographic.

“Overall, Washington provides students with a high-quality STEM education.”	% Agree – Disagree	Margin
Men	39-39	-
Women	44-27	+17
Age 18-49	48-32	+16
Age 50+	37-34	+3
White Voters	41-34	+7
Voters of Color	45-26	+19
Urban	51-33	+18
Suburban	49-26	+23
Small Town	26-44	-18
Rural	28-44	-16

Men are more divided on the quality of STEM education in Washington.

Younger voters tend to have a more optimistic view of STEM education.

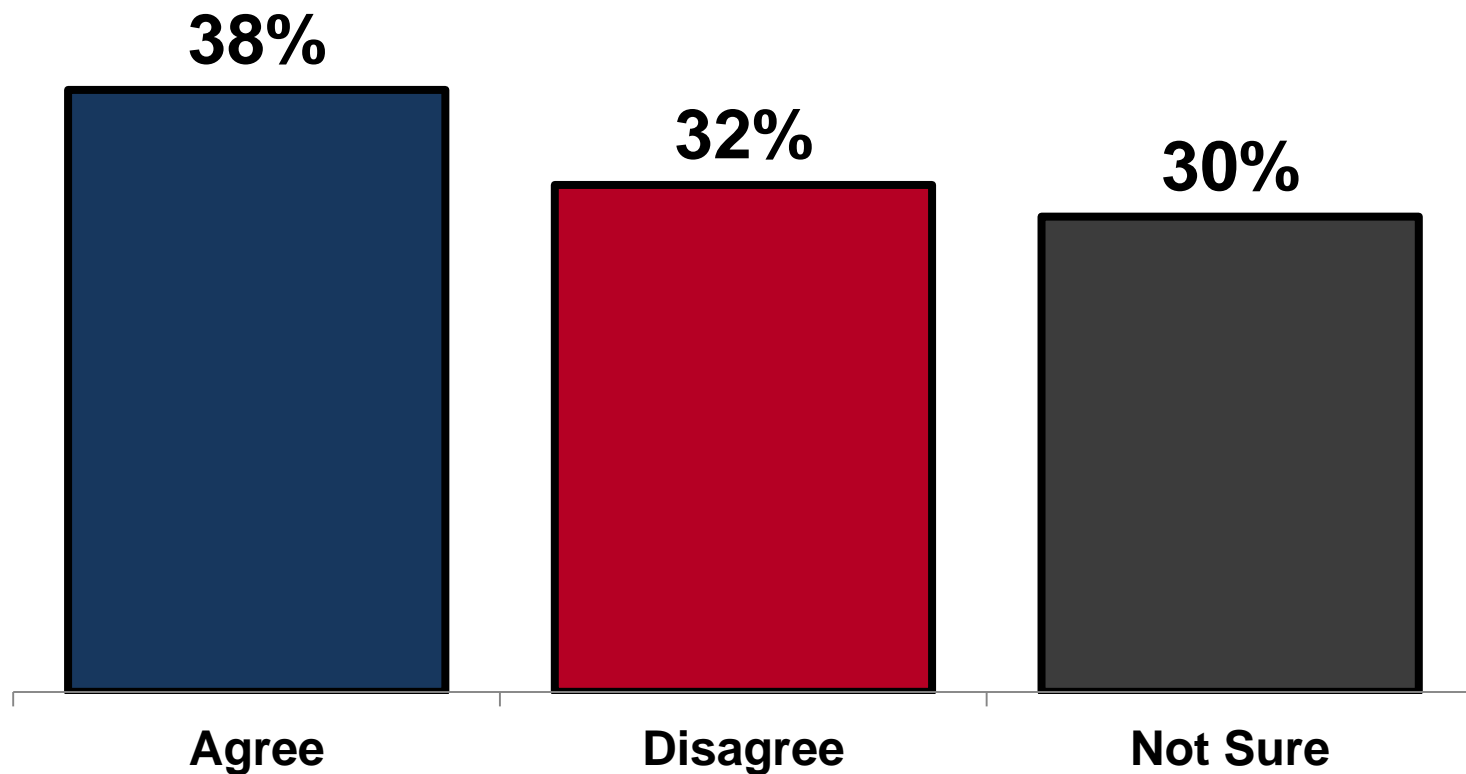
White voters are divided while voters of color are more optimistic.

Urban and suburban voters are the most enthusiastic about the quality of STEM education. Small town and rural voters are significantly more negative.

Voters are split on the job K-12 teachers are doing teaching STEM subjects.

Do you agree or disagree with this statement?

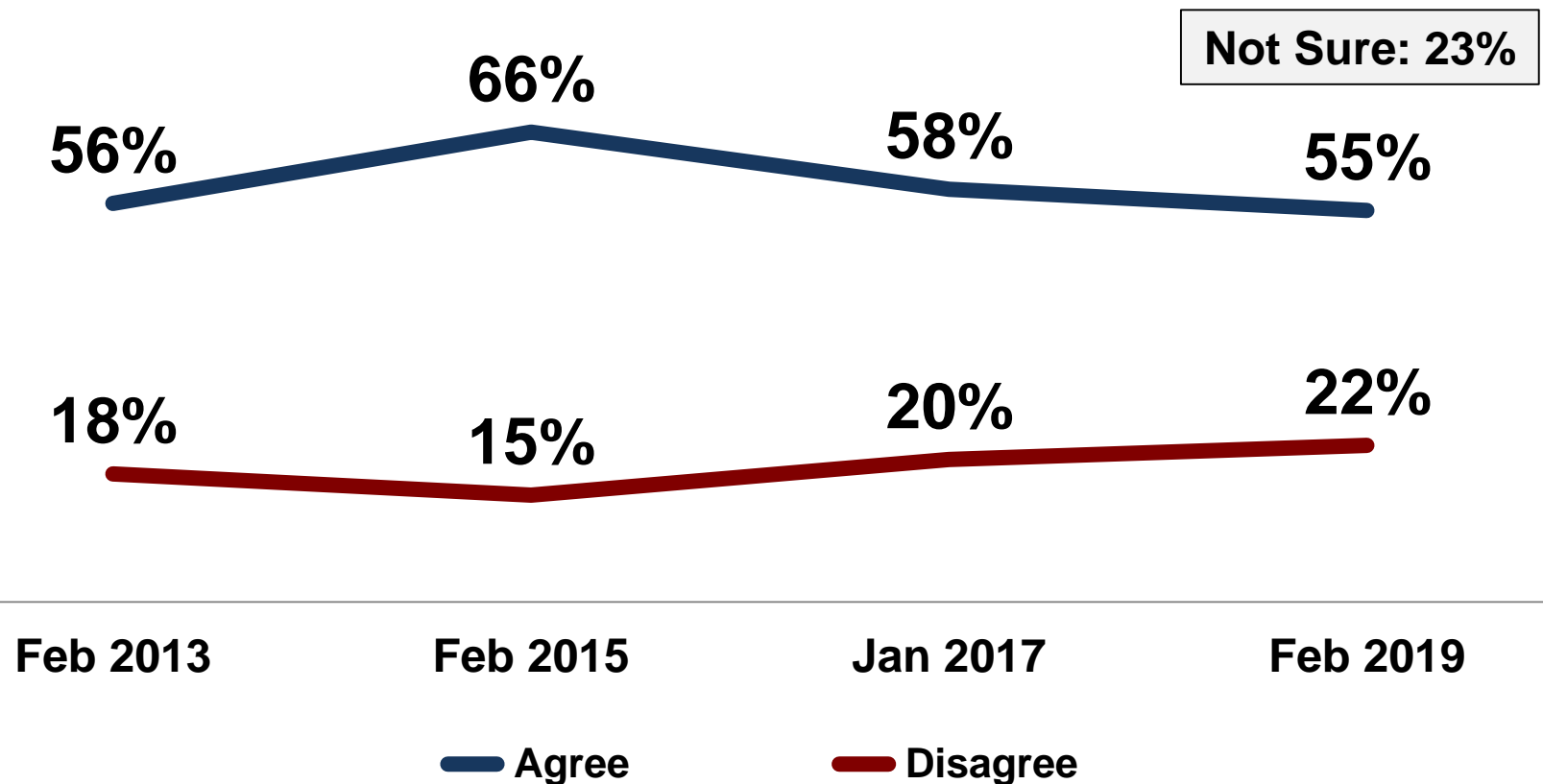
Washington K-12 teachers are doing a good job at teaching STEM subjects.



Perceptions of STEM education in colleges and universities has held steady since 2017.

Do you agree or disagree with this statement?

Washington colleges and universities are doing a good job of preparing students for careers in STEM fields.



Key Findings: **Early STEM**

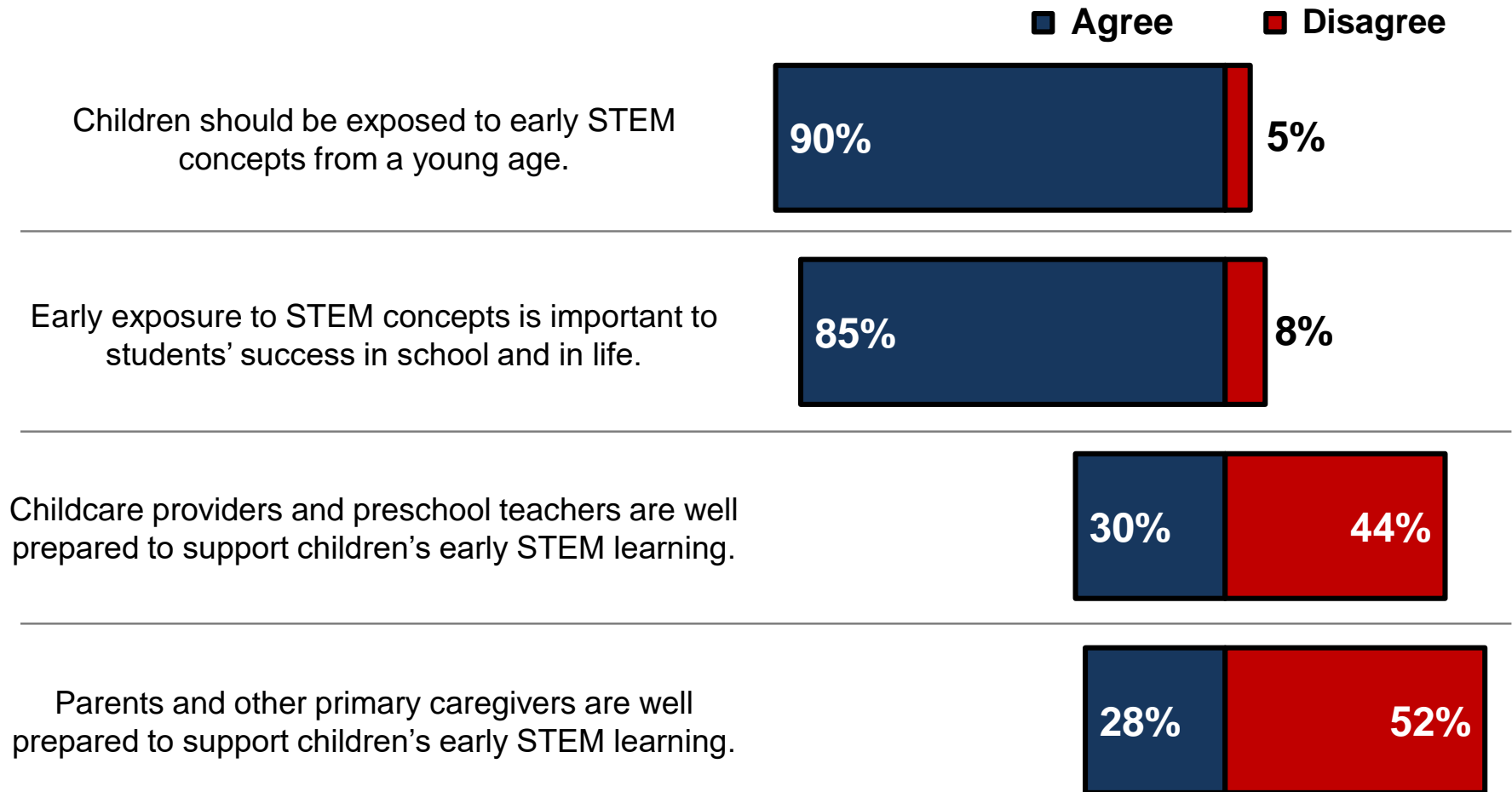
Respondents were provided the following description of *early STEM concepts*.

For the next several questions, you'll see the phrase “early STEM concepts.”

Early STEM concepts refers to basics like shapes, numbers, and counting.

While voters acknowledge the importance of exposing children to early STEM concepts, they are not confident that parents, childcare providers, or preschool teachers are prepared to meet that need.

Do you agree or disagree with this statement?



When it comes to beliefs about supporting early STEM learning, there are significant gaps by gender and parental status.

Do you agree or disagree with this statement?		
	“Childcare providers and preschool teachers are well prepared to support children’s early STEM learning.”	“Parents and other primary caregivers are well prepared to support children’s early STEM learning.”
Men	25-50	25-59
Women	35-37	31-46
Parents	39-41	37-49
Non-parents	26-45	24-54

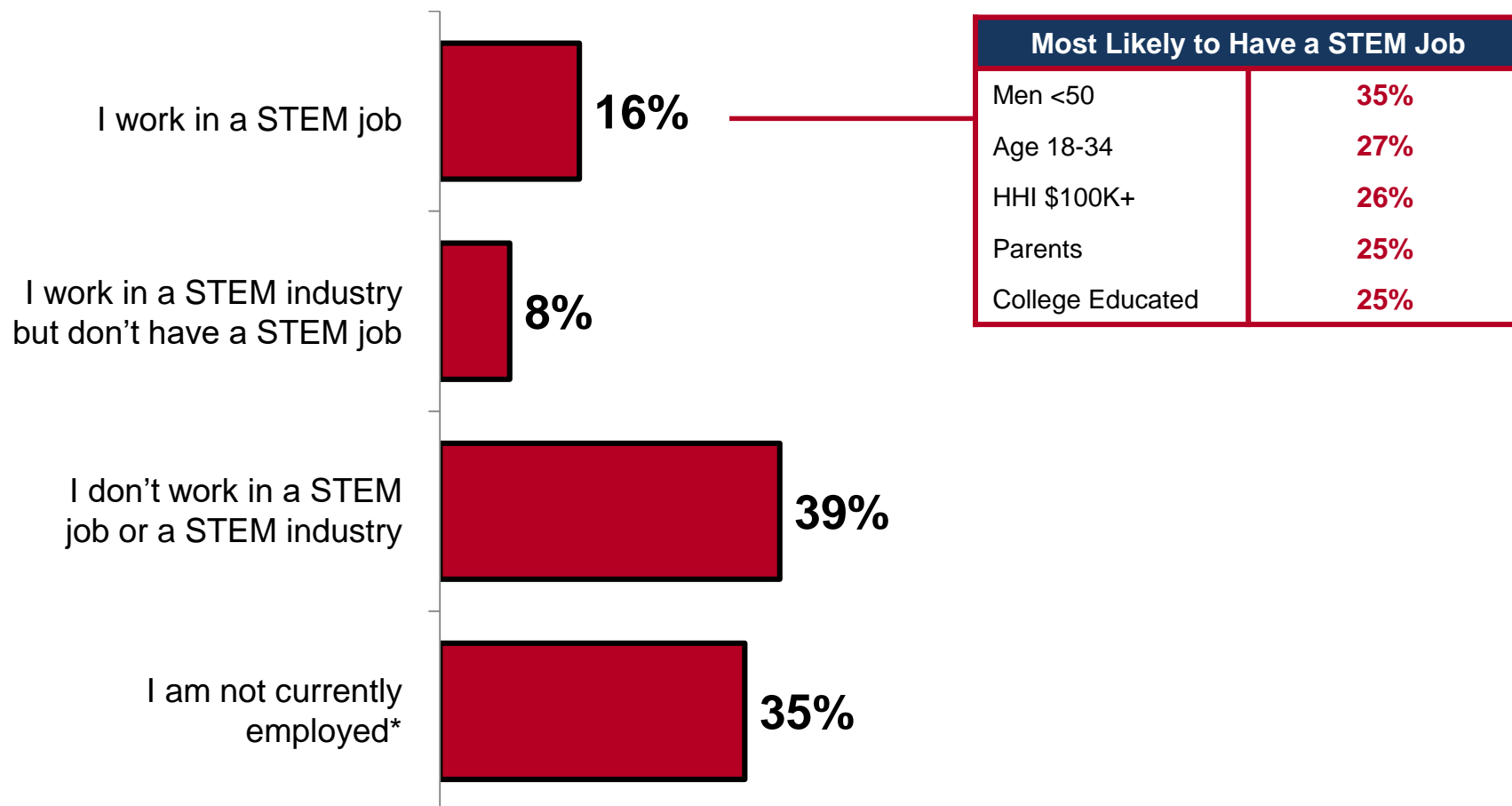
Men are pessimistic that parents, teachers, and childcare providers are prepared to meet young children’s early STEM learning needs. Many women are also skeptical.

Parents are divided on whether childcare providers and teachers are prepared. However, parents are more decisive (and pessimistic) about whether parents are prepared.

Key Findings: **STEM and the Economy**

Nearly one-in-five voters say they work in a STEM job. Younger men, millennials, and those in the highest income bracket are the most likely to do so.

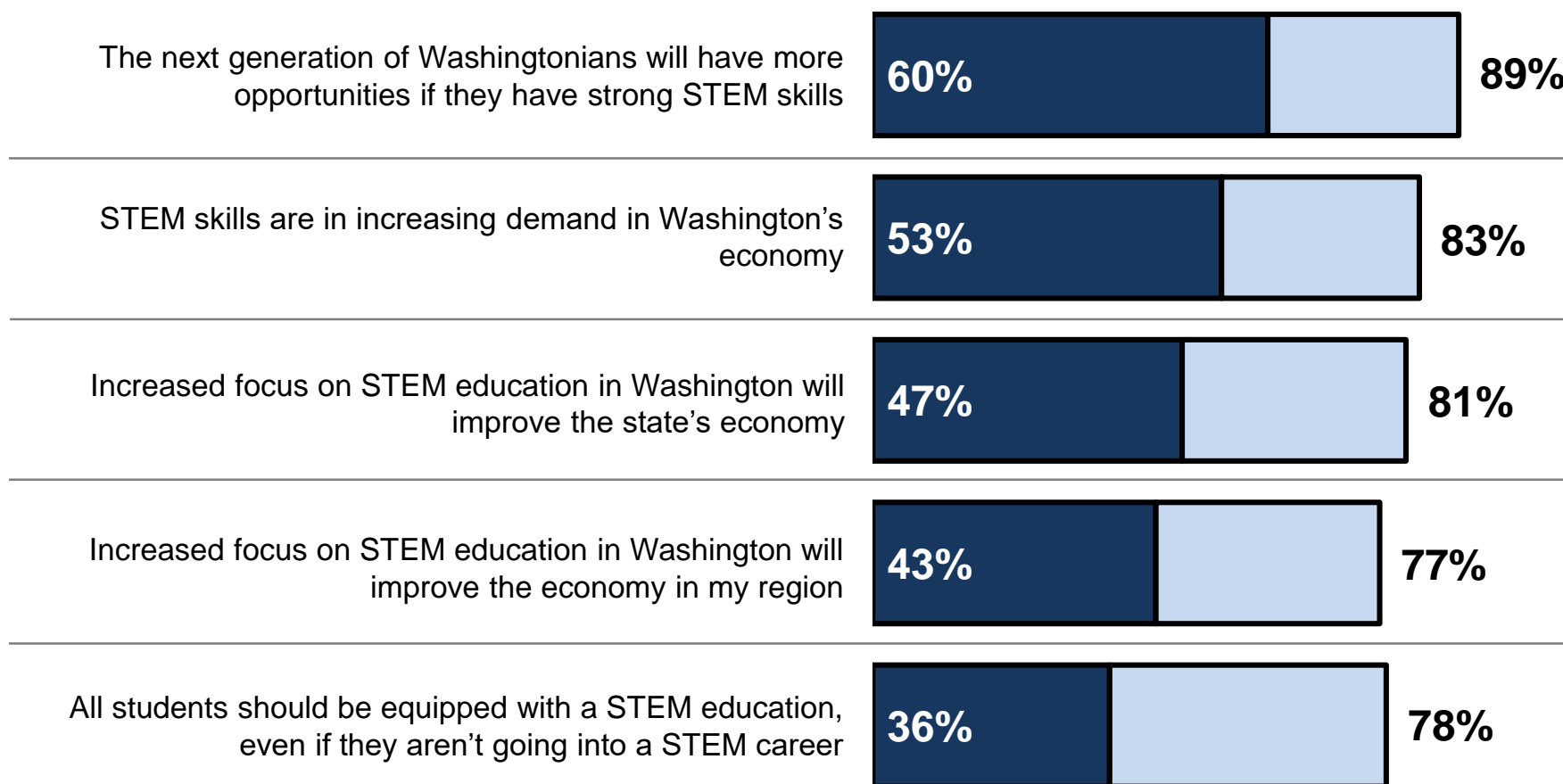
Which of these best describes your job?



Overwhelming majorities recognize the importance and economic benefits of STEM education.

Do you agree or disagree with this statement?

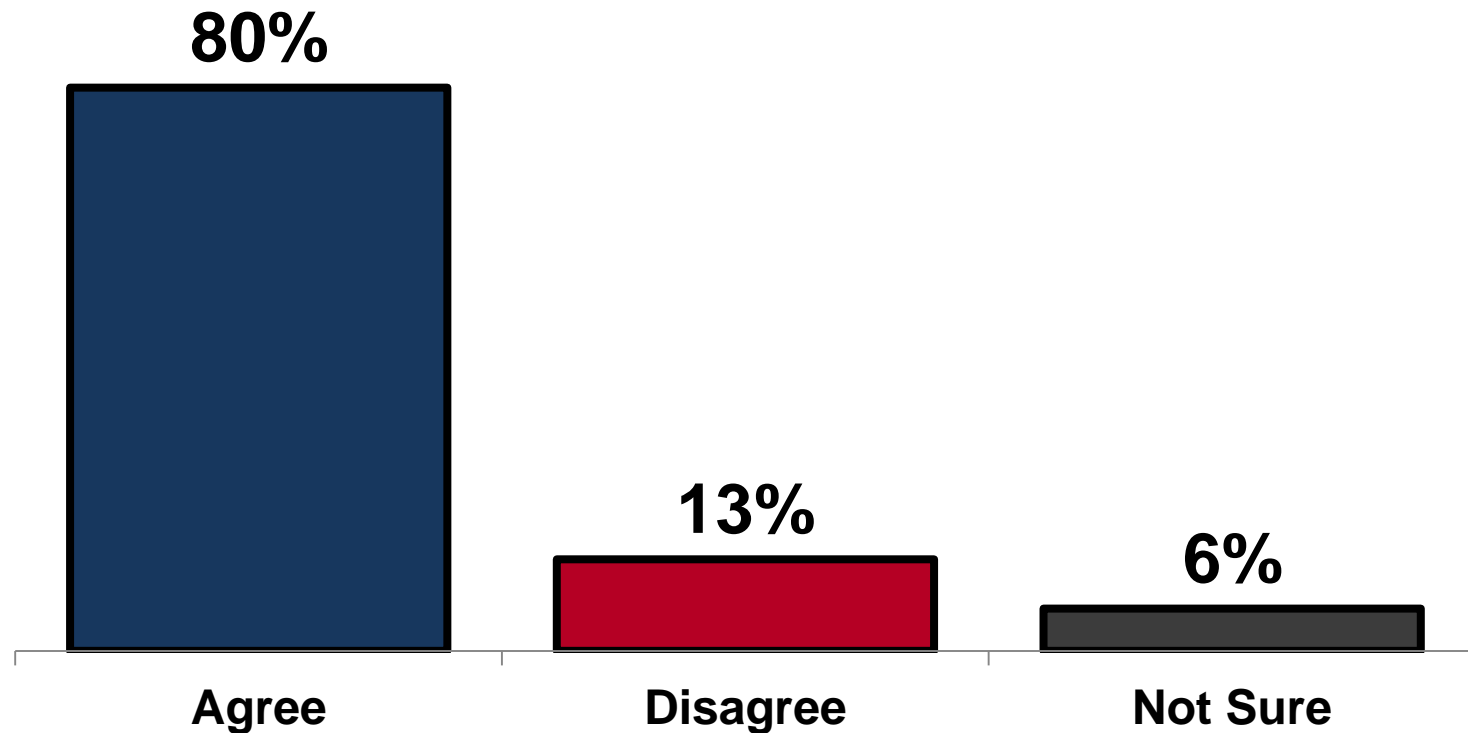
■ Strongly Agree □ Strongly/Somewhat Agree



Voters overwhelmingly agree that students learn important critical thinking and life skills when they receive a good STEM education.

Do you agree or disagree with this statement?

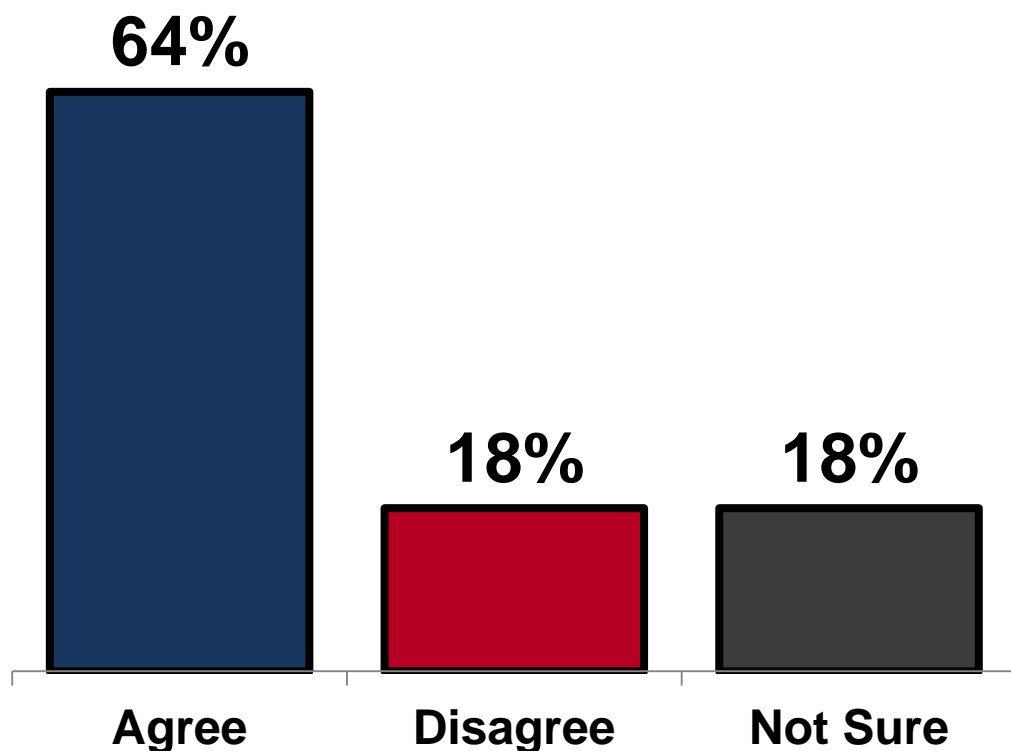
When students receive a good STEM education, they learn important critical thinking and life skills.



Two-thirds of voters agree that most living wage jobs involve STEM skills. Agreement is strongest among urban and suburban voters, Democrats, and the wealthiest voters.

Do you agree or disagree with this statement?

Most of the jobs and positions that pay a living wage in Washington involve STEM skills.

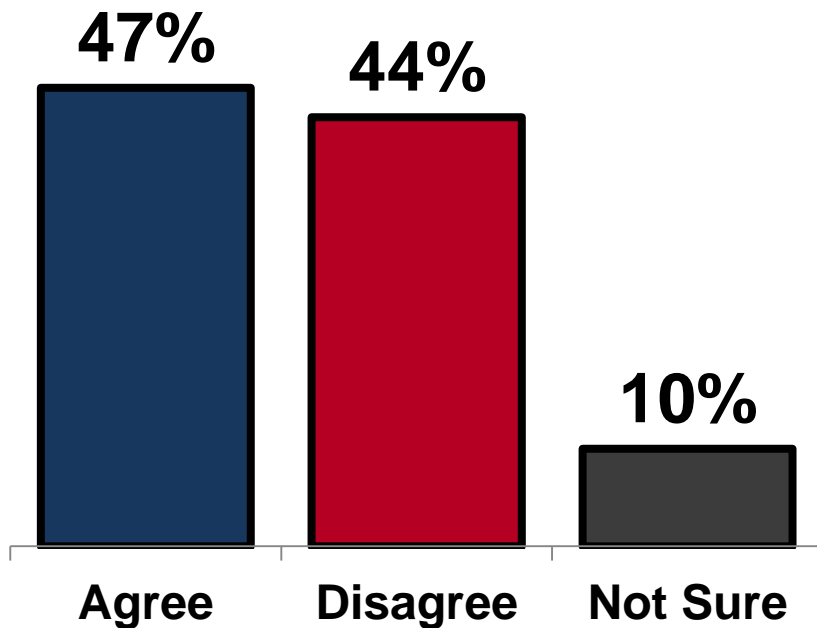


	% Agree-Disagree
Men	67-20
Women	63-16
White Voters	64-18
Voters of Color	67-16
Urban Community	72-21
Suburban Community	70-16
Small Town Community	54-16
Rural Community	51-22
Democrats	73-15
Independents	60-21
Republicans	57-21
HHI <\$50K	62-13
HHI \$50-100K	61-26
HHI \$100K+	68-18

There is significant room for education on the topic of STEM pathways. Only half of voters feel that a good STEM job can be obtained without a four-year degree.

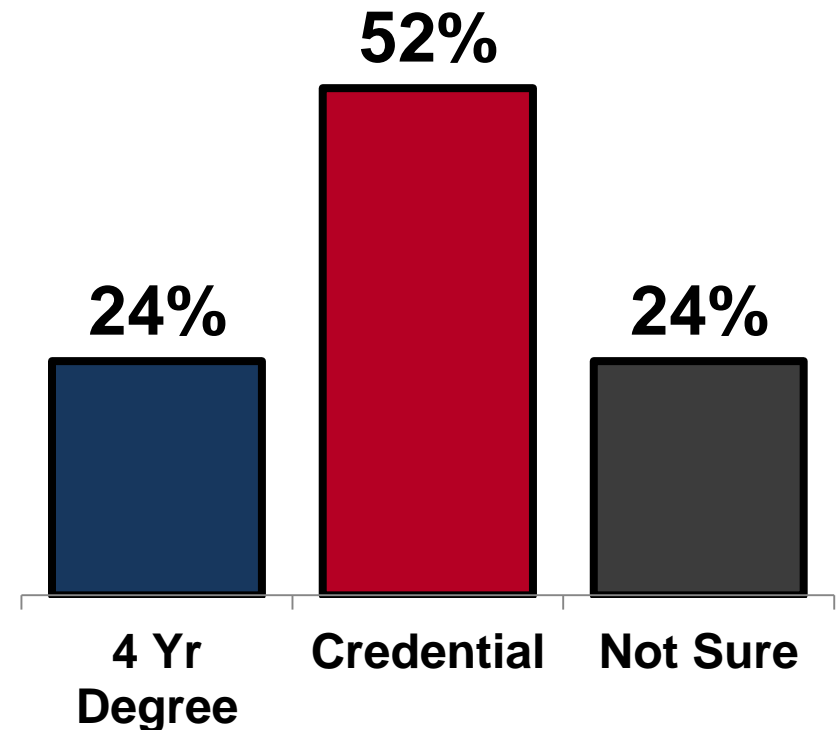
Do you agree or disagree with this statement?

A four-year college degree is necessary to be successful in a STEM-related job.



Which statement is closer to your opinion?

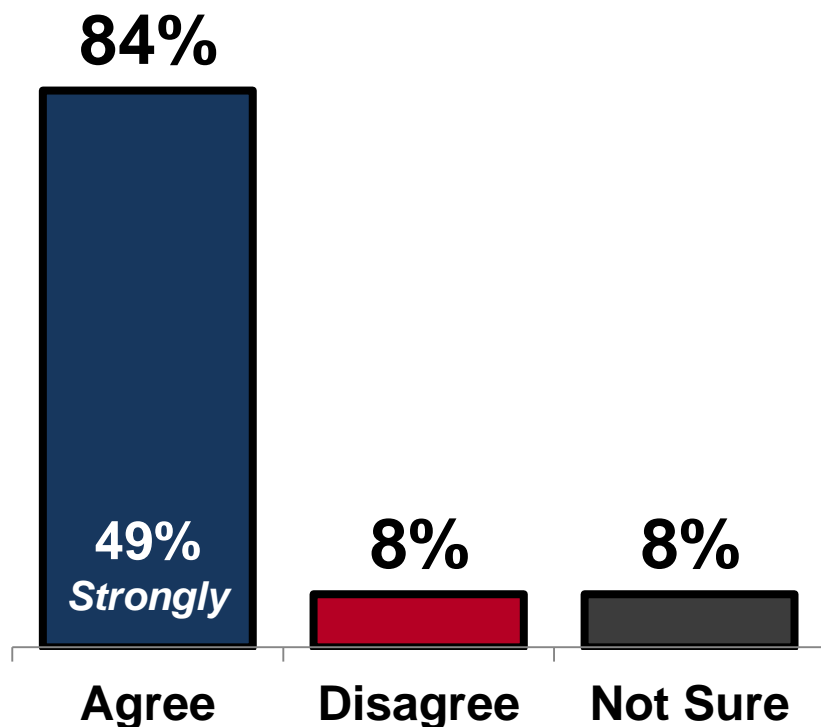
- *In WA, if someone wants a good STEM-related job, they will need to get a 4yr degree.*
- *In WA, people can get a good STEM-related job if they get a credential like an apprenticeship, industry certificate, or 2yr degree.*



Voters overwhelmingly agree that the state needs to do more to provide information about high paying job opportunities. Further, many agree that partnering with regional orgs will benefit students.

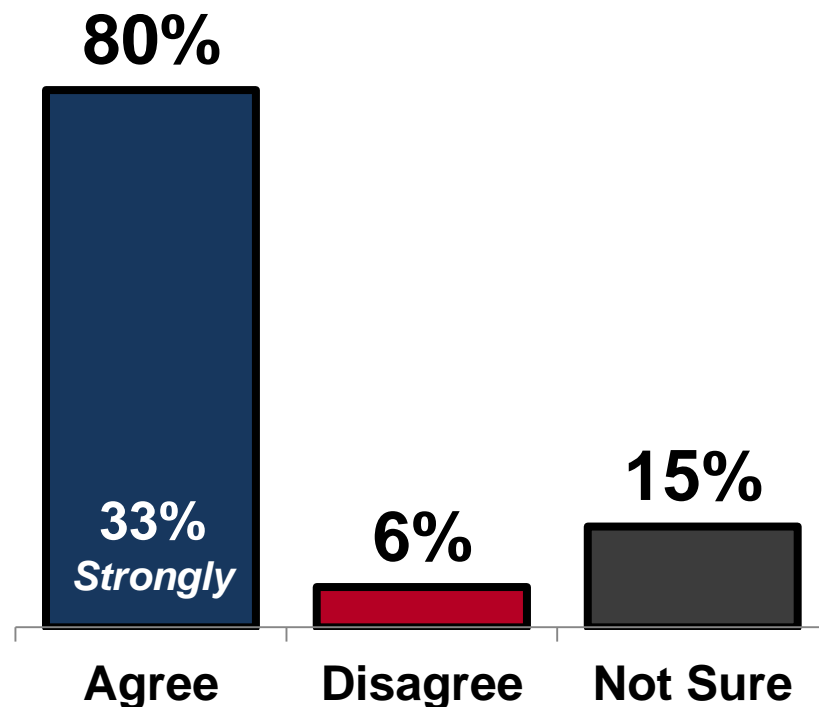
Do you agree or disagree with this statement?

The state needs to do more to provide students and the public with information about fast growing, high paying jobs, including where they are located and the schooling and training requirements to them.



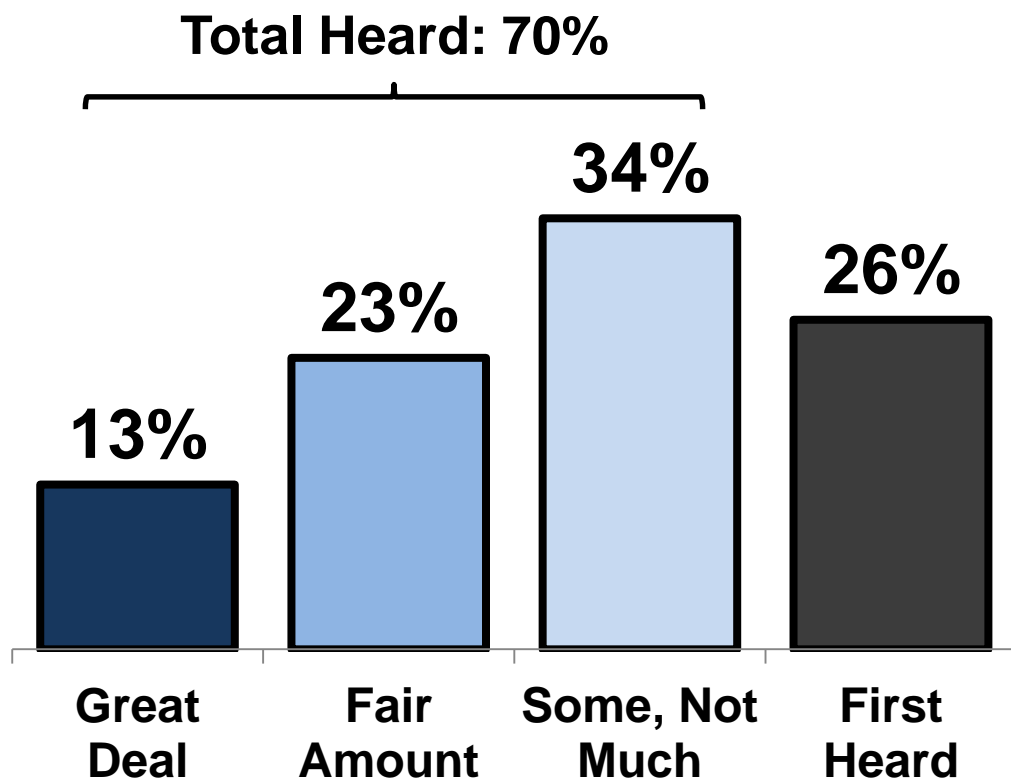
Do you agree or disagree with this statement?

Partnering with regional organizations that have local expertise ensures that students receive information about the careers that are growing in different regions of the state.



Seven-in-ten voters have heard about the STEM credential gap. Awareness varies by demographic group with men, younger, college educated, wealthier, and urban voters the most aware.

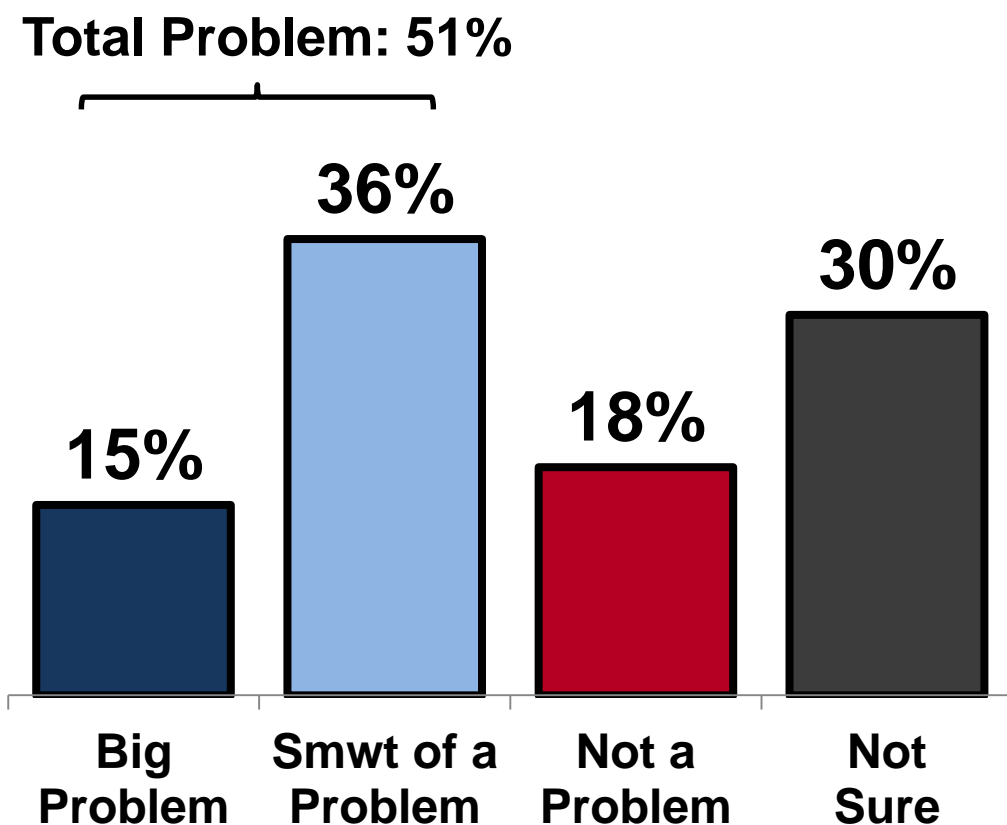
Some say that Washington's economy is being hurt because there aren't enough workers with STEM credentials to fill the jobs that are being created by fast growing STEM businesses and industries. Before today, how much have you heard or read about this particular issue?



	% Total Heard
Men	78
Women	63
Age <50	77
Age 50+	64
All Parents	77
Non-Parents	66
No College Education	62
College Educated	81
HHI <\$50K	53
HHI \$50-100K	76
HHI \$100K+	82
Urban Community	84
Suburban Community	69
Small Town Community	68
Rural Community	61

While few dismiss the credentials gap, most do not see it as a “big problem” for their region and nearly a third are unsure. There are significant information gaps across demographics.

In your opinion, does your region of WA face this problem (lack of workers with STEM credentials to fill open STEM jobs)?



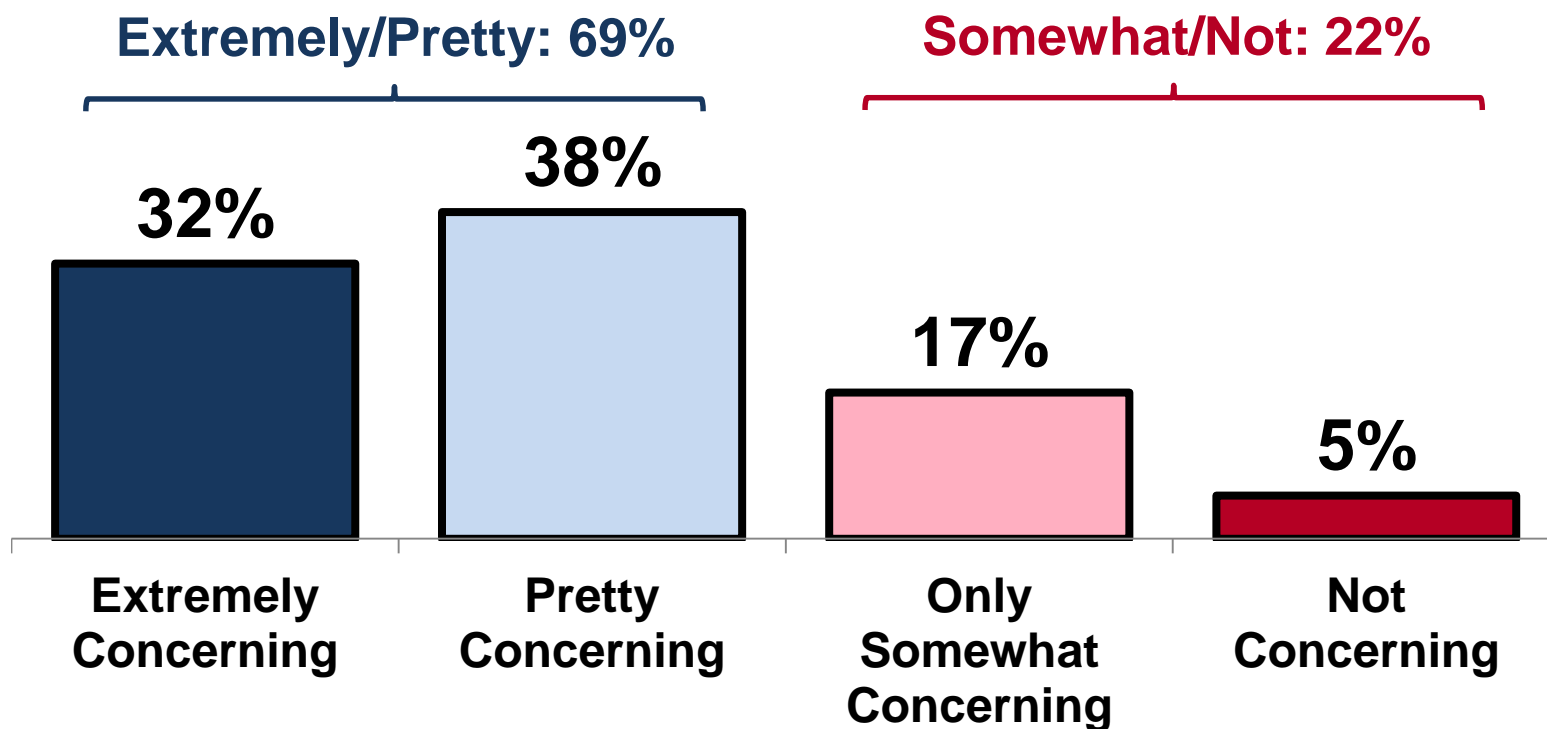
	% Problem-Not
King County	53-18
Northwest WA	52-13
Southwest/Peninsula	46-18
Eastern WA	56-23
Urban Community	69-19
Suburban Community	49-13
Small Town Community	53-26
Rural Community	41-26

Most Likely to Say Not Sure	
HHI <\$50k	48%
Age 65+	39%
Independents	39%
No College Degree	38%
Suburban	37%

After more information, two-thirds express high concern over the credentials gap. One-in-three are extremely concerned.

How concerning, if at all, do you find this information?

Over the next 5 years, nearly 240,000 good-paying jobs in STEM-related fields may go unfilled by Washington residents because local workers won't have the necessary skills and credentials to meet the job requirements. And unless we take action to give the next generation the STEM skills and credentials they need to take advantage of these opportunities, that number is expected to grow to over 360,000 unfilled jobs by 2026.



While voters endorse a range of ideas to address the credentials gap, prioritizing STEM-focused career-connected learning opportunities earns the broadest and strongest support.

Potential Steps to Address the STEM Credentials Gap

■ Support ■ Oppose

Prioritize career-connected learning opportunities that expose children to STEM careers and teach STEM skills, such as job shadowing in STEM jobs, STEM internships, youth apprenticeships, and worksite visits.



Work with parents and guardians to encourage students to study STEM subjects or pursue a career in a STEM field.



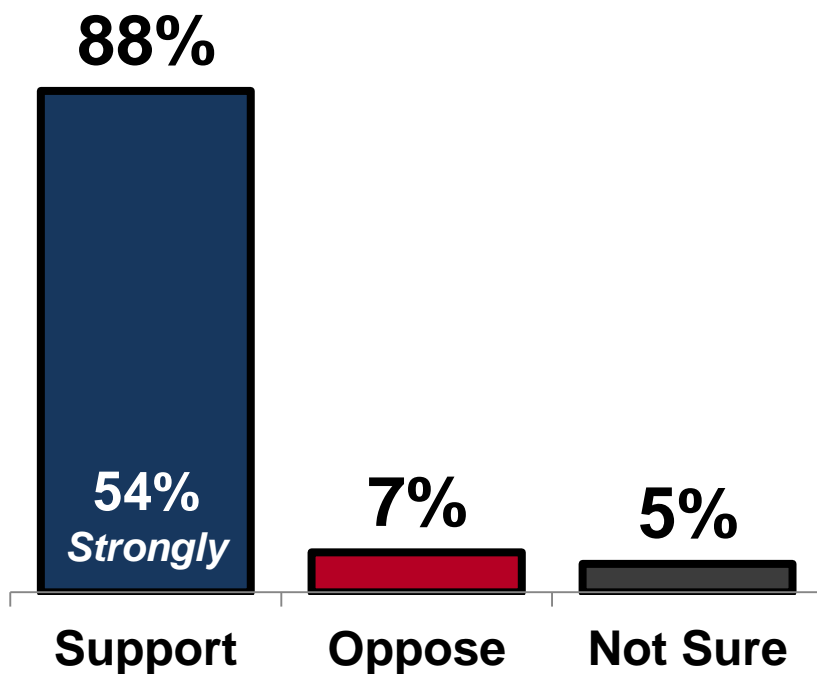
Change high school graduation requirements so that students must take more STEM classes before graduating.



In fact, at multiple points in the survey, voters demonstrated broad and intense support for elevating career-connected learning.

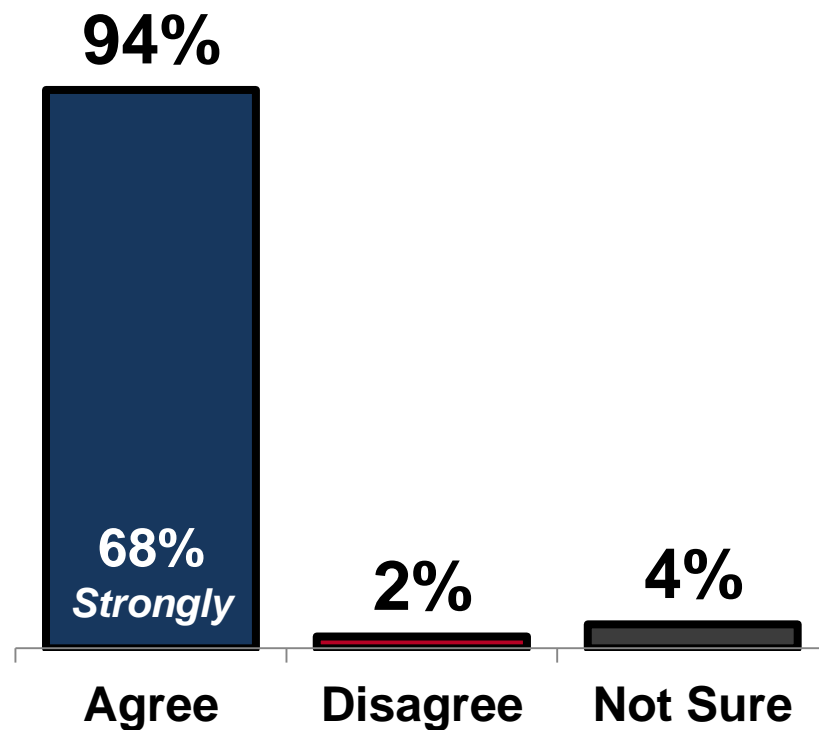
Do you support or oppose this idea?

Prioritize career-connected learning opportunities that expose children to STEM careers and teach STEM skills, such as job shadowing in STEM jobs, STEM internships, youth apprenticeships, and worksite visits.



Do you agree or disagree with this statement?

It is important for students at every level to have access to career-connected learning opportunities like internships, youth apprenticeships, and real-world project-based learning, which expose them to high-demand careers in their region.

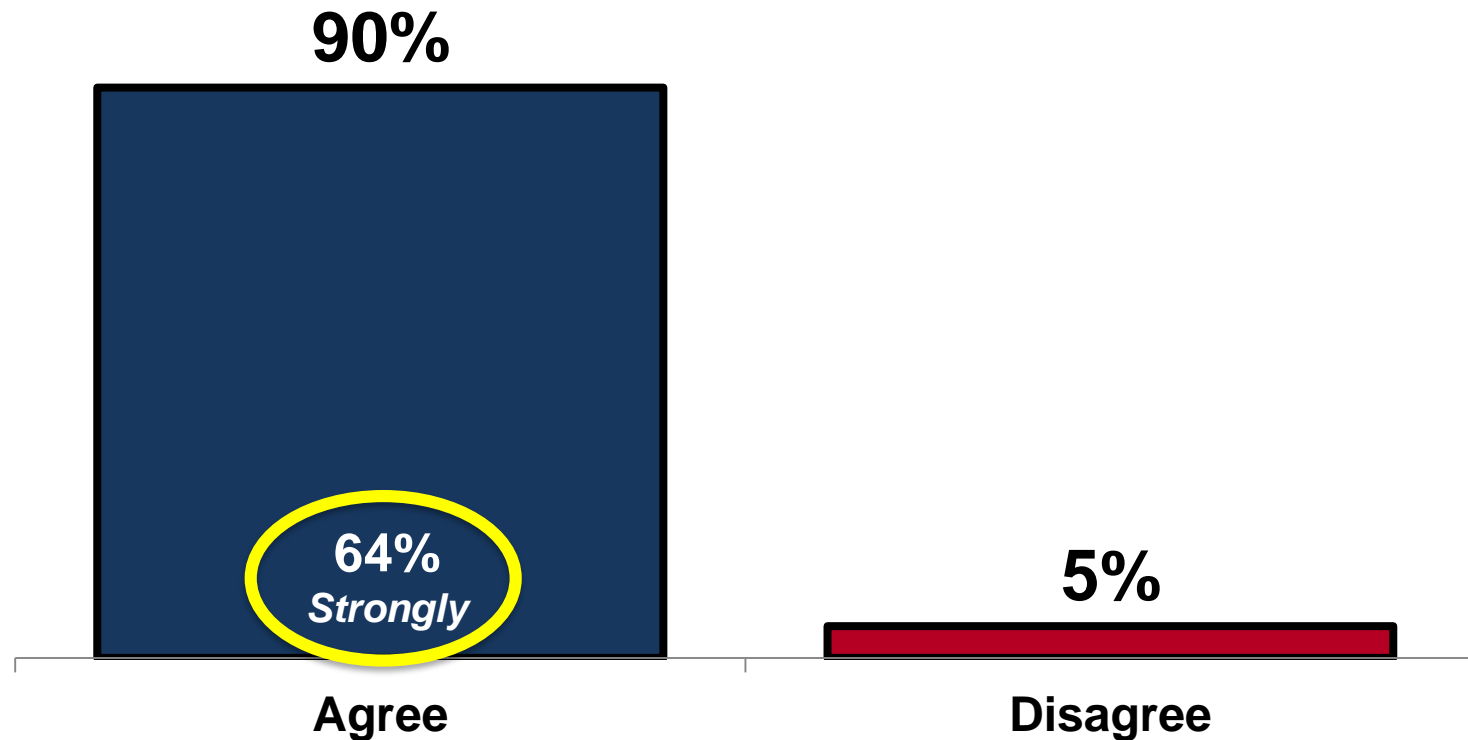


Key Findings: **STEM and Equity**

Universally, voters value equal access to high-quality STEM education in Washington's public schools.

Do you agree or disagree with this statement?

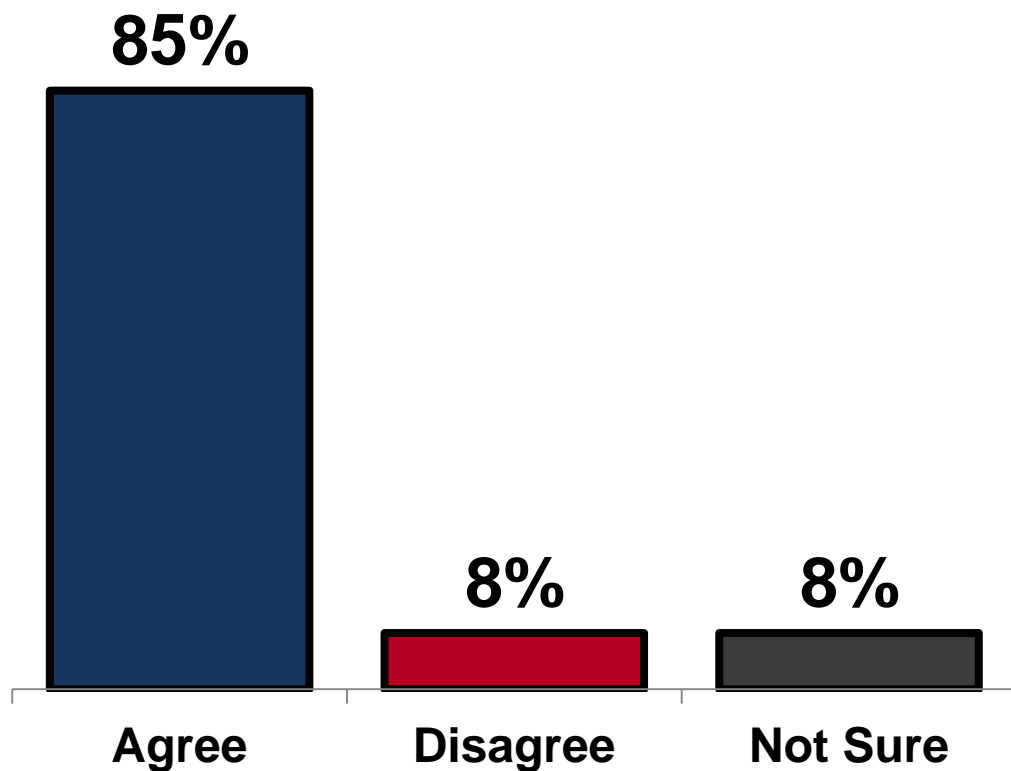
Every child should have access to a high-quality STEM education in Washington's kindergarten through 12th grade public schools.



Voters also see the connection between social mobility and a strong STEM education. This recognition extends across all income levels.

Do you agree or disagree with this statement?

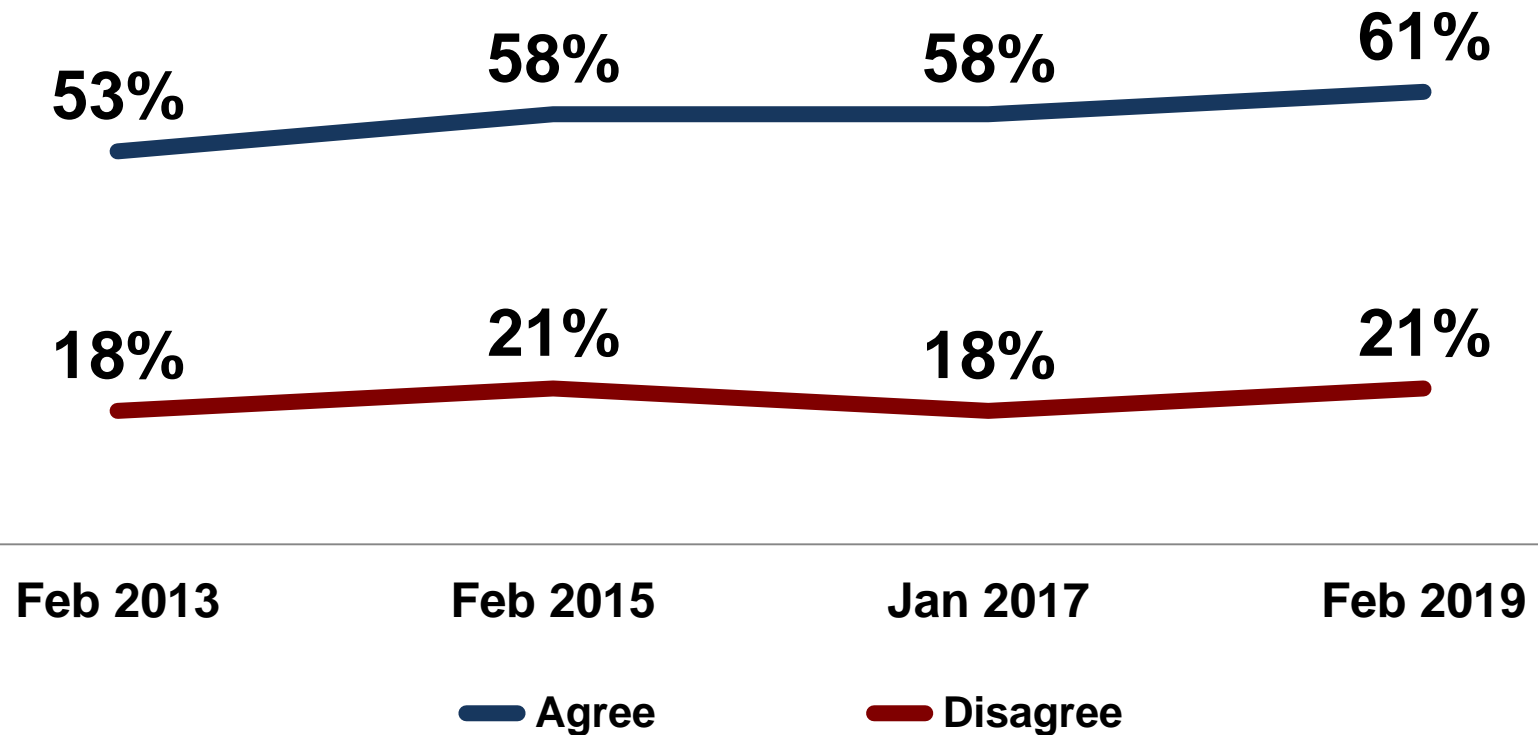
Children who grew up in poverty will have a better chance to break the cycle of poverty if they have a strong STEM education.



	% Agree-Disagree
HHI <\$50K	83-7
HHI \$50-100K	84-10
HHI \$100K+	86-7

Over 60% feel there is a need for greater gender diversity in STEM careers. This represents is an 8-pt increase in six years.

Do you agree or disagree with this statement?
There are not enough women working in STEM careers.



Acknowledgement of the need for more gender diversity varies by gender, age, race, and type of community.

<i>“There are not enough women working in STEM careers.”</i>	% Agree – Disagree	Margin
Men	55-24	+31
Women	66-17	+49
Age 18-49	69-21	+48
Age 50+	54-20	+34
White Voters	59-21	+38
Voters of Color	69-15	+54
Urban	67-23	+44
Suburban	63-21	+42
Small Town	63-15	+48
Rural	45-23	+22

Women are more likely to agree there are not enough women in STEM careers.

Younger voters are more likely to agree while many older voters are unsure.

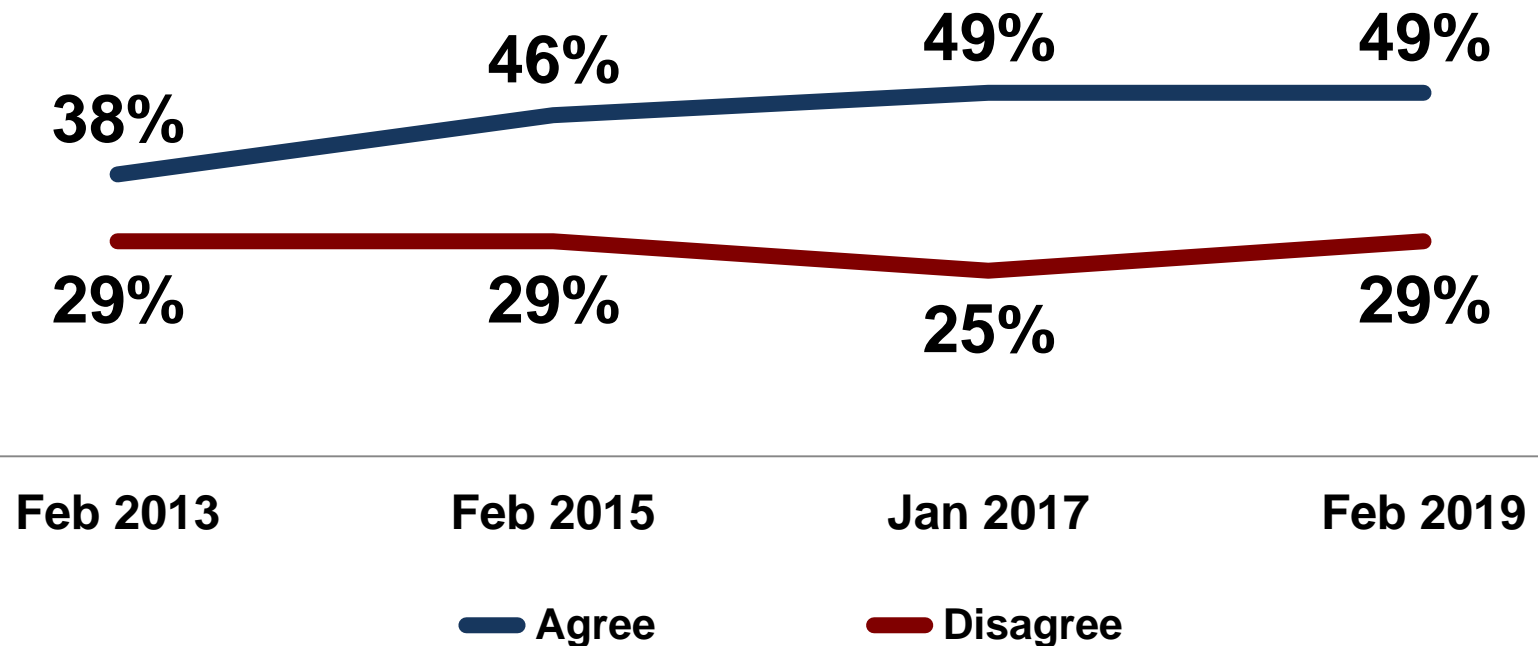
Two-thirds of voters of color see a need for more gender diversity.

Nearly one-third of rural voters are unsure when asked this question (compared to only one-in-ten in big cities).

Compared to gender diversity, fewer recognize the need for more racial diversity in STEM careers.

Do you agree or disagree with this statement?

There are not enough racial and ethnic minorities working in STEM careers.



Views on racial diversity in STEM careers vary by demographic, especially by type of community.

<i>“There are not enough racial and ethnic minorities working in STEM careers.”</i>	% Agree – Disagree	Margin
Men	41-35	+6
Women	56-23	+33
Age 18-49	53-31	+22
Age 50+	44-26	+18
White Voters	47-29	+18
Voters of Color	58-25	+33
Urban	68-21	+47
Suburban	50-28	+22
Small Town	46-26	+20
Rural	25-41	-16

Men are almost split on the question, while a majority of women agree.

Younger voters are more likely to have an opinion than older voters.

Voters of color are notably more likely to agree (though a plurality of whites concur).

Urban voters are the most likely to agree with the statement. Agreement drops off as community types get more rural.

Key Findings: **Computer Science**

Once informed of the computer science skill gap, huge majorities support expanding CS courses at both the K-12 and higher education levels.

Computer science is one of Washington's highest paying and highest demand skill sets across the state. However, Washington's education system does not provide enough students with computer science training and degrees to keep up with the available jobs. Here are a few ideas that have been proposed to address this issue.

■ Support ■ Oppose

Expand the number of K-12 public schools in Washington that offer computer science classes.



Increase the capacity of Washington State colleges and universities to graduate more Washington students with computer science degrees.





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