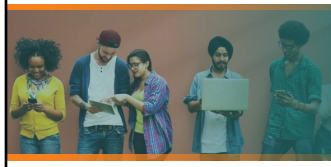
Link to Slides: bit.ly/WSCA2019

C4C counselors for computing

WISCONSIN SCHOOL COUNSELOR ASSOCIATION WSCA



Preparing for Careers of the Future: School Counselors, Lead the Way!

Thursday, Feb 7, 2019 7:45 am - 10:45 am

Presented by: ***Angela Cleveland, NCWIT Counselors for Computing Program Director***

Julie Gustafson, NCWIT Counselors for Computing Community Manager

@NCWIT #NCWITC4C

Meeting Room N

PUMP CS

C4C is a project of the NCWIT K-12 Alliance, made possible by Merck.

NCWIT Lifetime Partner: *Apple;* ***NCWIT Strategic Partners:*** *the National Science Foundation, Microsoft, Bank of America, Google, Intel, Merck, and AT&T;*
NCWIT Investment Partners: *Avaya, Pfizer, Bloomberg, Hewlett Packard Enterprise, Qualcomm, and Facebook*

C4C counselors for computing

What brings you here?

C4C counselors for computing

C4C counselors for computing

Overview

1. What is C4C?
2. What is Computer Science?
3. Why Computer Science?
4. Computer Science in Wisconsin
5. Why School Counselors?
6. Where to go from here?

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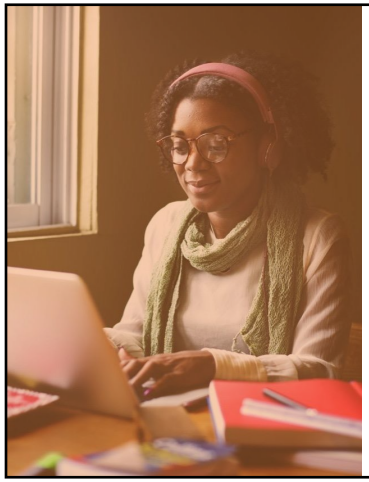

Counselors for Computing

Mission

Provide counselors with information and resources they can use to support ***ALL*** students as they explore computer science education and careers.

How We Do It

C4C provides professional development and resources for counselors and others in an advising role.

Outreach, Activism for Change

Counselors as members of the CS Edu community:

- Critical partners in CS for ALL
- Recognize counselors as allies

Leadership Development

Join C4C leadership development workshops, receive stipends, and do good work.

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What Is Computer Science?

CS is **posing a problem** in such a way that a **computer** can help us **solve** it.

- Communicate
- Solve problems
- Design and imagine
- Share, store, retrieve, manipulate, **secure** information

CS is **designing** computing devices and **programming** them.

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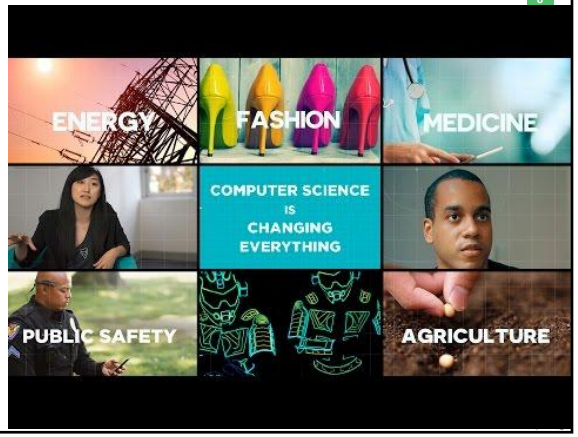
2 What is Computer Science? 6

Computer Science is Changing Everything!



bit.ly/CSChangingEverything

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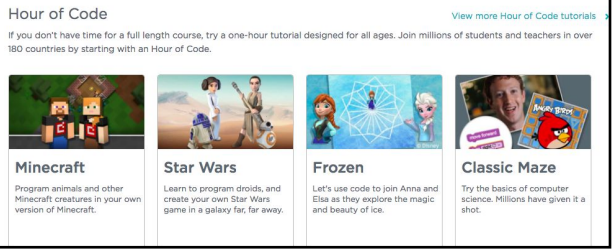
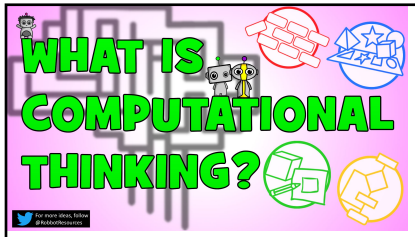
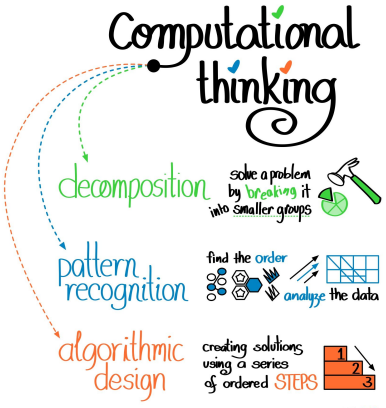
studio.code.org/courses

Pair Programming Demonstration

Select one!







Credit: www.robbotresources.com

ASCA: schoolcounselor.org/asca/media/asca/home/MindsetsBehaviors.pdf

C+C counselors for computing

B-LS 1. Demonstrate critical-thinking skills to make informed decisions

B-LS 9. Gather evidence and consider multiple perspectives to make informed decisions

B-SMS 7. Demonstrate effective coping skills when faced with a problem

B-LS 4. Apply self-motivation and self-direction to learning

How does computational thinking connect with school counseling?

B-SS 7. Use leadership and teamwork skills to work effectively in diverse teams

B-SMS 6. Demonstrate ability to overcome barriers to learning

B-LS 5. Apply media and technology skills

B-SS 6. Use effective collaboration and cooperation skills

Wisconsin: _____ job openings Today

glassdoor

www.glassdoor.com

company reviews
salary reports
interview reviews and questions,
benefits reviews
office photos and more.
➪ *Search "Information Technology" in your town!*

How many jobs are within 20 mile radius of your town?

Dice®

www.dice.com

Career search site that serves information technology and engineering professionals.
➪ *Search "Information Technology" in your town!*

Some may think:

This problem is about "**STEM**" (Science, Technology, Engineering, and Math)…

Source: Code.org

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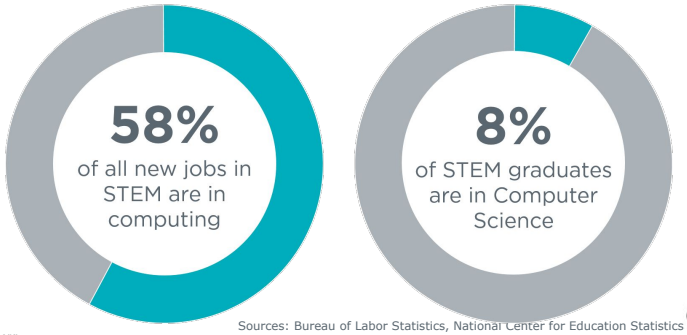
The STEM problem is in computer science



Source: Code.org

Sources: Bureau of Labor Statistics, National Center for Education Statistics

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Solving the diversity problem begins in K-12

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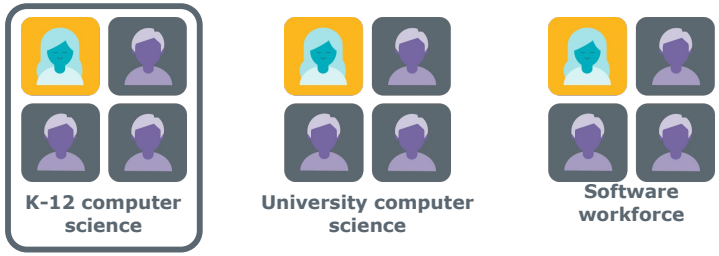
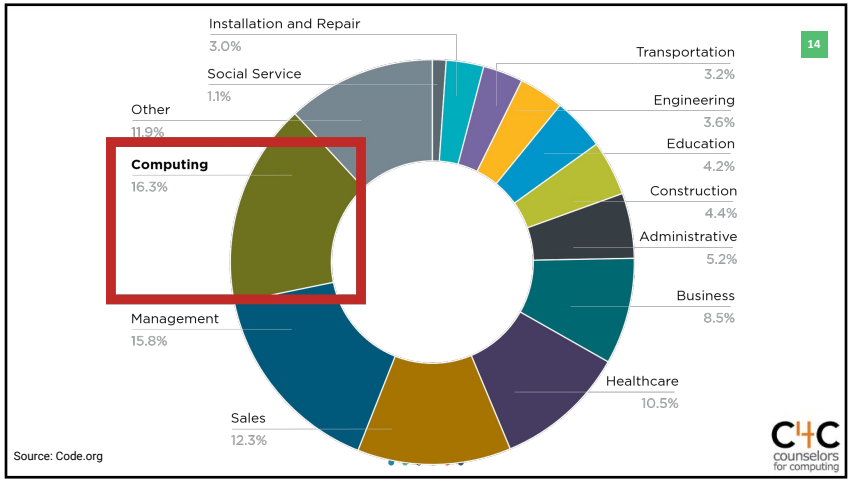


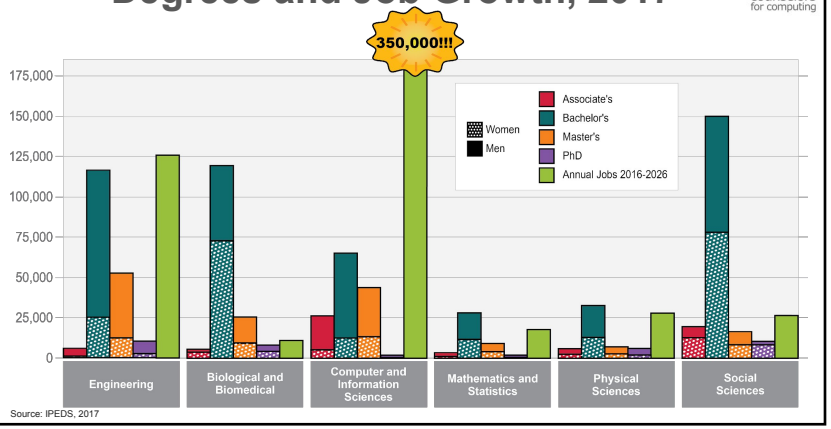
Women who try AP Computer Science in high school are ten times more likely to major in it in college, and Black and Hispanic students are seven times more likely.

Source: Code.org

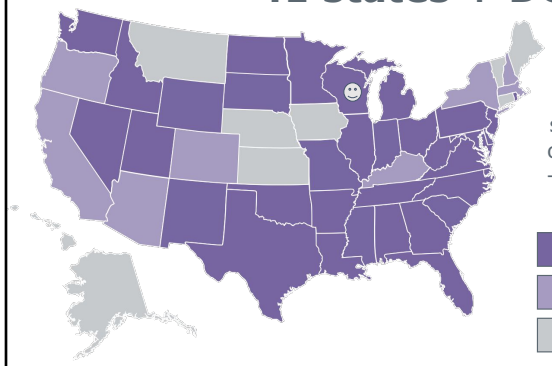
Sources: College Board, National Center for Education Statistics, Bureau of Labor Statistics



Degrees and Job Growth, 2017



CS can count for graduation in 41 states + DC



In 41 states plus DC, computer science can count towards high school graduation math or science requirements - **up from 12 states in 2013.**

- Computer science counts statewide
- Computer science can count (school decides)
- Computer science is an elective

4 Computer Science in Wisconsin

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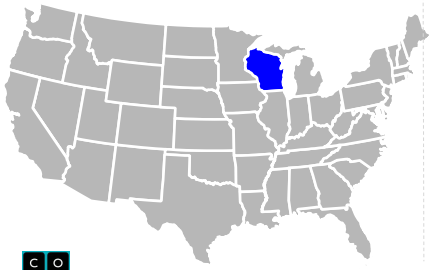
Wisconsin Fact Sheet - 2019



6,939 Open computing jobs
(2.4 x state average demand rate)

918 Computer Science Grads
X No Dedicated state funding for CS PD
X Doesn't require all high schools to offer CS
✓ K-12 CS curriculum standards

AP Stats
17% of schools teach AP CS
1,498 students took the AP exam
20% were female
107 underrepresented minorities

Source: Code.org/promote

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Video: http://bit.ly/PUMPCS19Video

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Code.org CS Pathway

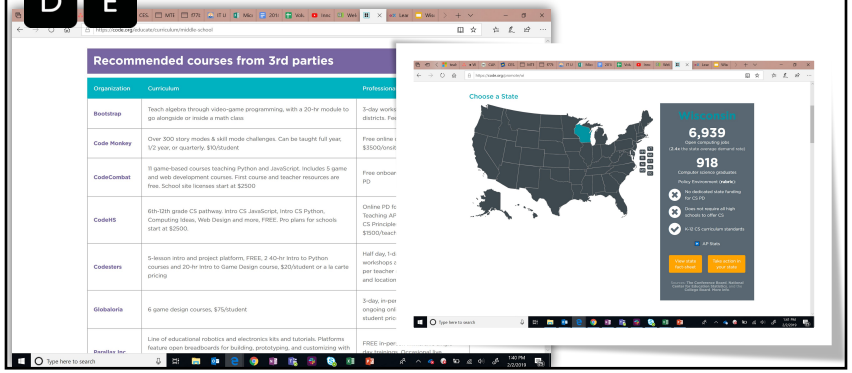
Recommended Code.org courses

View my recent courses

Courses from Code.org for students in grades K-12 and professional learning for teachers.

Elementary school						Middle school			High school			
K	1	2	3	4	5	6	7	8	9	10	11	12
									CS Principles			
						CS Discoveries						
CS Fundamentals												
Pre-reader Express			CS Fundamentals: Express									
Professional Learning for all grade levels												Learn more

Code.org Resources



PLTW CS Pathway

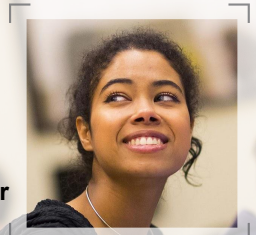
PLTW Launch (PreK-5)
Amazing Discoveries Start Here

PLTW Gateway (6-8)
Engaging. Exciting. Empowering.

PLTW Computer Science (9-12)
Empower Your Students to Be Technology Trailblazers

- Computer Science Essentials
- Computer Science Principles
- Computer Science A
- Cybersecurity

Microsoft Philanthropies
TEALS



Year-long **classroom teacher partnership** with **volunteer industry professionals**

Rigorous **curricula and resources** developed by CS educators and industry professionals

Computer science in every high school
tealsk12.org

TEALS Models of Support

Co-Teach

For teachers new to CS who want help learning the content and a gradual release

Volunteers teach or co-teach with classroom teacher while teacher is learning the material

Volunteers support with grading, and helping students during lab

3-4 volunteers, 4-5x per week

Lab Support

For teachers comfortable with 80% of course CS content and want a technical backstop, reduced instructor-student ratio, and industry connection in class

Volunteers support the class with grading, and helping students during lab

1-2 volunteers, 2-5x per week

Classroom Enrichment

For teachers who can teach a CS course independently and want to be a part of TEALS community (curriculum support, monthly meetups, online community, industry mentor)

Range of support from in-class teaching assistant to occasional career talks or demos

TEALS and Supported Curricula

Introduction to Computer Science (TEALS)	AP Computer Science Principles (Partners)	AP Computer Science A (TEALS)
University of California, Berkeley CS 10	Complements (does not replace) AP CS A	University of Washington CSE 142/143
1 Semester course or Full year option w/ Python 2nd semester	Year long course with AP exam in May	Year long course with AP exam in May
Block programming language	Broad coverage of computing principles, issues, and creative solutions	Industry standard Java
All grade levels	*Lab Support or Classroom Enrichment support only.*	So/Jr/Sr with Algebra II completion

Computer Science in Every High School

A **pathway for students** to learn CS including the two AP College Board Exams

A sustainable **community** for teachers and industry professionals to work together

Proven model to grow teacher capacity

7 current SE WI schools, 34 statewide; 2019/20 goal of 50+ schools

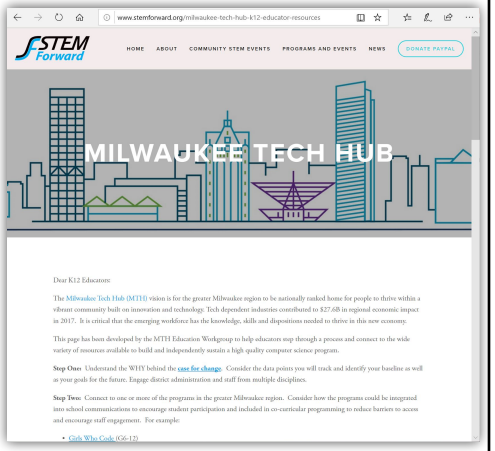
Apply at:
tealsk12.org/schools

STEMforward.org

in partnership with

MKE Tech Hub

K12 Educator Resources



WI K12 CS Programs

We have discussed:

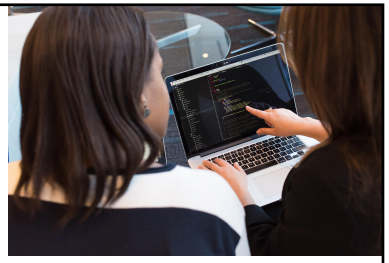
- Code.org
- ECS
- PLTW
- TEALS

Others:

- CodeHS
- Code the Future
- Girls Who Code
- First Robotics (Lego)

Mark Zachar | markz@tealsk12.org | www.tealsk12.org

What is like to study computer science?



Northeast Wisconsin Technical College

Txujtsheeb Simeon Xiong
Northeast Wisconsin Technical School
Perkins Grant – IT and Business Analyst Career/Academic Advisor

C|C counselors for computing

Why School Counselors?

Encouragement: ASCA Ethical Standards

"School counselors are advocates, leaders, collaborators and consultants who create *systemic change* by providing *equitable educational access* ...School counselors demonstrate their belief that all students have the ability to learn by *advocating for an education system that provides optimal learning environments for all students*...School counselors as social-justice advocates support students from all backgrounds and circumstances."

Self Perception

Technology affects ***every*** field

Source: Code.org

Career Perception

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"Don't ask kids what they want to be when they grow up.

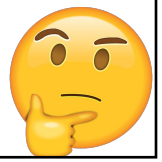
Ask them what problems they want to solve.

This changes the conversation from who do I want to work for to what do I need to learn in order to be able to do that."

- Jaime Casap,
Google Education Evangelist

What problems do you want to solve?

How can technology help you solve those problems?



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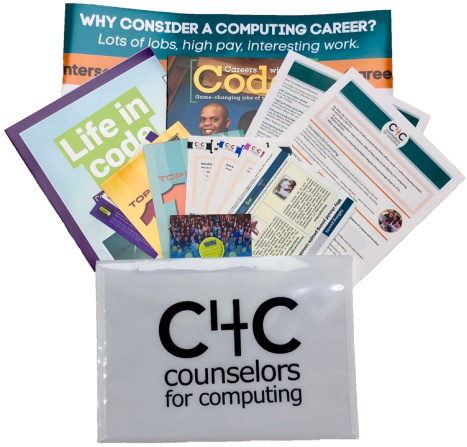

6 Where to go from here?

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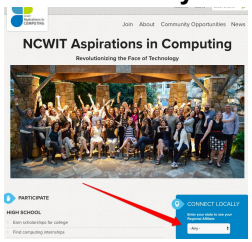
Connect with your Aspirations Community!



Aspirations.org

Connect with FabFems! (FabFems.org)

FabFems

SEE YOURSELF IN COMPUTING

See Yourself In Computing Virtual Reality Experience

Sign up on our paper sheet
(name, email)
for your FREE VR Headset!

https://cospac.es/h2g5

C4C counselors for computing

Changes in computer science education are happening fast, with implications for counselor practice.

Many groups are involved in bringing new opportunities to your students and it all adds up to CS for ALL!

Join this movement to support all students, by bringing opportunity to those who are traditionally underrepresented in computer science classes and in computing professions.

We can bring you up to speed.

@NCWIT
#NCWITC4C

Thank You!

Angela Cleveland, Program Director NCWIT Counselors for Computing
Julie Gustafson, NCWIT Counselors for Computing Community Manager

ncwit.org/c4c c4c@ncwit.org

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