

Computer Science Skills, Opportunities, Careers and the Future

Information Session for Parents, Teachers and Guests
June 1, 2019

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CS4HS Itinerary

- **9:00 – 9:30** Registration, Set Up, Refreshments
TECH Building Lobby
- **9:30 – 9:45** Welcome!
- **9:45 – 11:45** Showcase and Competition
TECH Building Lobby and Adjacent Classrooms
- **9:45 – 11:45** Hour of Code, Student Guests, TECH 244
- ➔ • **10:00 – 10:45** Computer Science Information Session 1,
Williamsville School District Guests, TECH 160
- **11:00 – 11:45** Computer Science Information Session 2,
Guests, All schools except Williamsville, TECH 160
- **12:00 – 12:30** Lunch, Bulger Communication Center
- **12:30 – 1:30** Award Ceremony, Bulger Communication Center

CS4HS, 2017-2018

Region	Organizations Funded
United States and Canada	27
Europe, the Middle East and Africa	28
Australia and New Zealand	27
China	25

Source: https://docs.google.com/document/d/1mf7AgJNFxrnFo8HC2_jlmlP78gB2S3fI4laKBMr2TtE/edit, 2018

Google is committed to supporting professional development of teachers through CS4HS

Global Impact since 2009

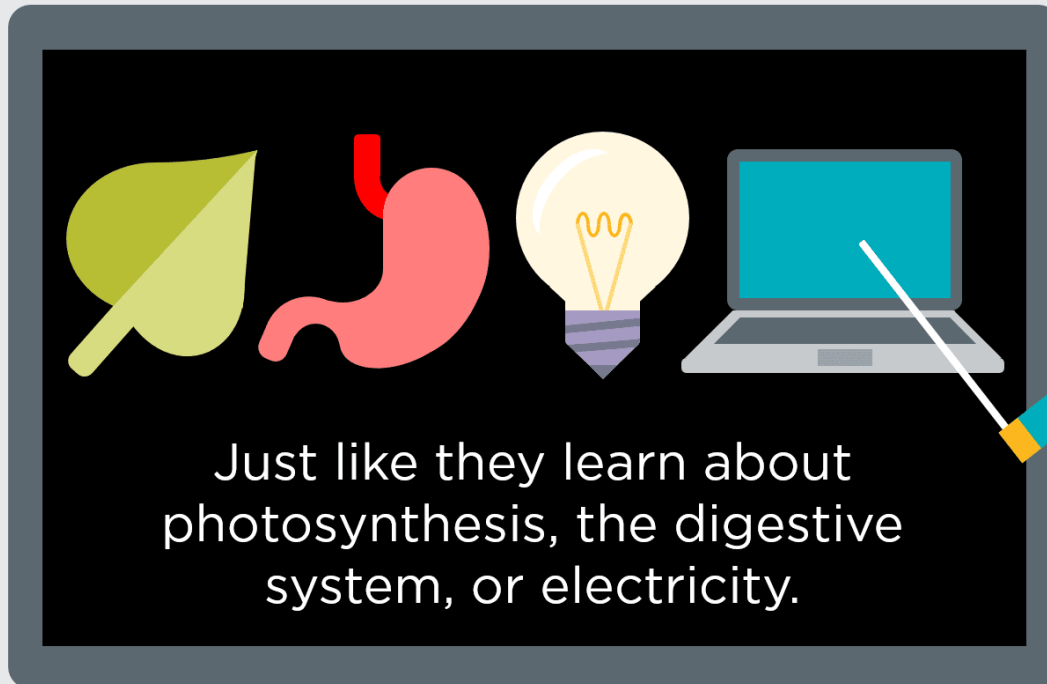
- 50,000+ Teachers
- 50 Countries
- 2,000,000 Students

Source: https://edu.google.com/computer-science/educator-grants/#?modal_active=none, 2018



- Began in 2012
- First Student Competition, 2013
- 25 new teachers participate annually
- Our Shared Success
 - 150+ teachers
 - 60+ Secondary Schools from WNY

Computer science is foundational



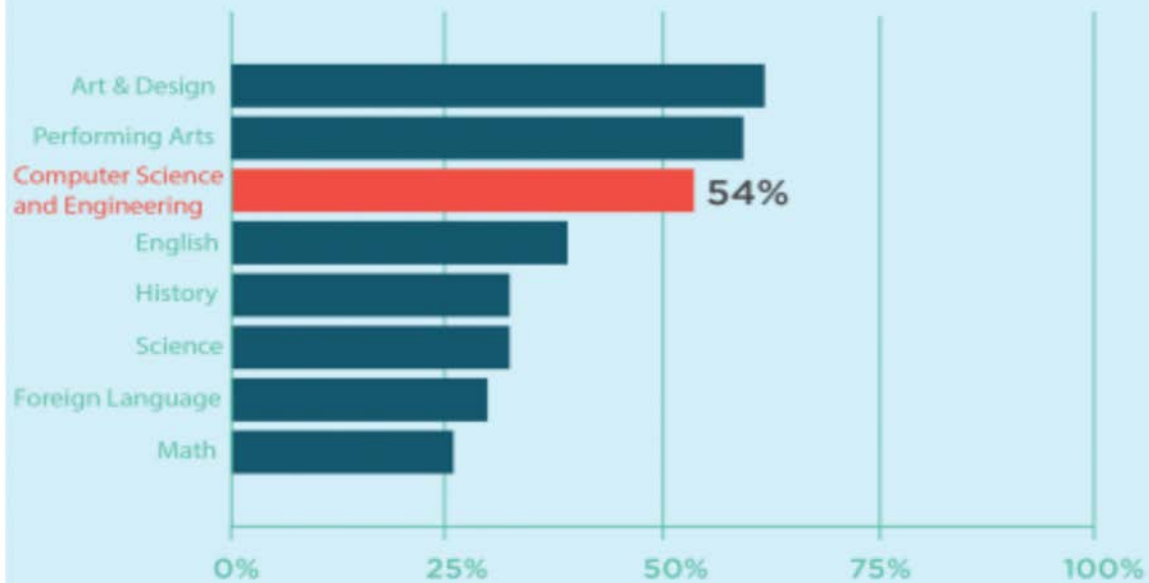
Every 21st century child should have a chance to learn about algorithms, how to make an app, or how the internet works.



High schoolers like computer science!

For high school students, computer science and engineering rank near the arts.

Percentage of high school students who like computer science "a lot"



Brought to you by
{CHANGE THE EQUATION}

SOURCE: Code.org analysis of survey data from The Amgen Foundation and Change the Equation, Students on STEM, 2016. The Amgen Foundation and Change the equation surveyed a nationally representative sample of high school students in grades 10 through 12.

Source: code.org/promote

Interactive Map Statistics for each state


<https://code.org/promote>



Occupational Outlook US Bureau of Labor Statistics 2019

UNITED STATES DEPARTMENT OF LABOR

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OCCUPATIONAL OUTLOOK HANDBOOK








Occupational Outlook Handbook > Computer and Information Technology >

Computer and Information Technology Occupations



Employment of computer and information technology occupations is projected to grow 13 percent from 2016 to 2026, faster than the average for all occupations. These occupations are projected to add about 557,100 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

The median annual wage for computer and information technology occupations was \$86,320 in May 2018, which was higher than the median annual wage for all occupations of \$38,640.

	OCCUPATION 	JOB SUMMARY	ENTRY-LEVEL EDUCATION  	2018 MEDIAN PAY  
	Computer and Information Research Scientists	Computer and information research scientists invent and design new approaches to computing technology and find innovative uses for existing technology. They study and solve complex problems in computing for business, medicine, science, and other fields.	Master's degree	\$118,370
	Computer Network Architects	Computer network architects design and build data communication networks, including local area networks (LANs), wide area networks (WANs), and Intranets. These networks range from small connections between two offices to next-generation networking capabilities such as a cloud infrastructure that serves multiple customers.	Bachelor's degree	\$109,020

<https://www.bls.gov/ooh/computer-and-information-technology/home.htm>

Occupational Outlook Handbook

U.S. Bureau of Labor Statistics

Systems Analyst-

<http://www.bls.gov/ooh/Computer-and-Information-Technology/Computer-systems-analysts.htm#tab-1>

After entering this site you can select any job title

2018 Average Salary by Discipline Bachelor's Degrees, 2018

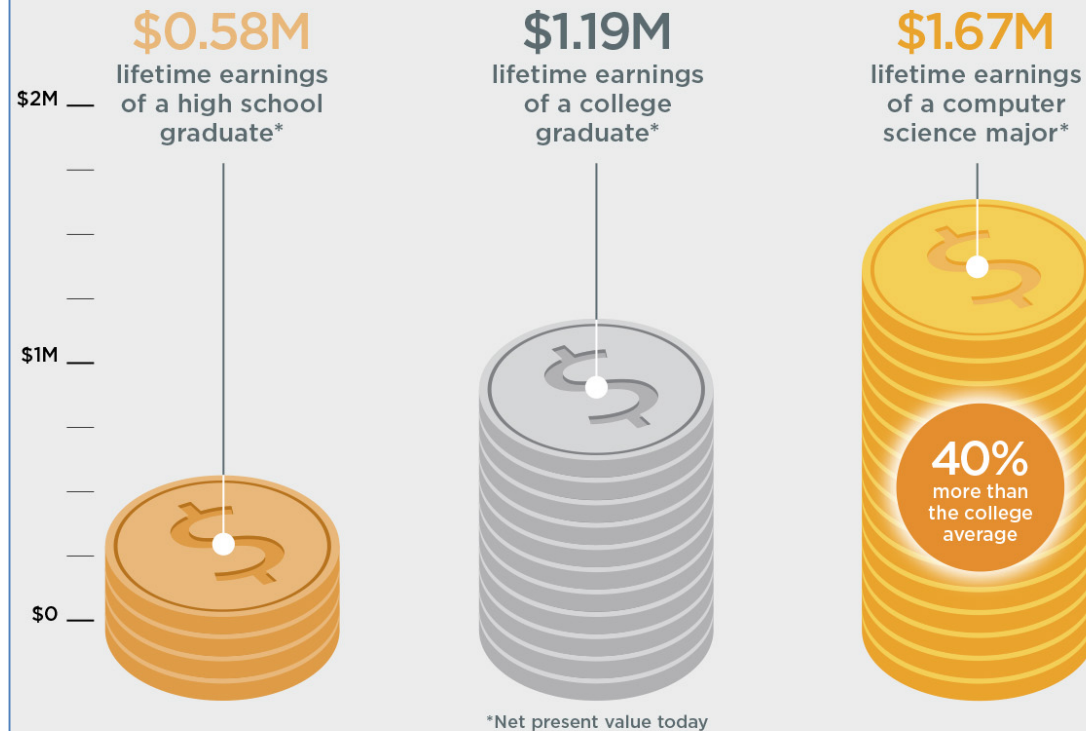


BROAD CATEGORY	AVERAGE SALARY
Engineering	\$66,521
Computer Science	\$66,005
Math & Sciences	\$61,867
Business	\$56,720
Social Sciences	\$56,689
Humanities	\$56,688
Agriculture & Natural Resources	\$53,565
Communications	\$51,448

Source: Winter 2018 *Salary Survey*, National Association of Colleges and Employers

<https://www.nacweb.org/job-market/compensation/the-top-paid-majors-for-the-class-of-2018/>

The value of a computer science education



A computer science major can earn 40% more than the college average.

Source: code.org/promote, May 2016

Career Opportunities



- Programming, Web Development
- Hardware
- Networking
- Telecommunications
- Technology Management
- Information Security
- Entertainment
- Gaming
- Data Mining, Informatics
- Business Applications
- Industry Specific Applications
 - **Limitless Opportunities Here!**

Career Opportunities



Variety of Occupations within
Computer Science

<http://www.computerscience.org/careers/>

Top 10 Jobs in Computer Science

Top 10 Jobs In Computer Science

Software Developer

Database Administrator

Computer Hardware Engineer

Computer Systems Analyst

Computer Network Architect

Web Developer

Information Security Analyst

Computer Programmer

Computer and Information Systems Manager

Project Manager

LinkedIn: Skills Companies Need Now

- **Creativity**
- **Persuasion**
- **Collaboration**
- **Adaptability**
- **Time Management**

These skills compliment and are in **ADDITION TO** technical skills needed to do a job

Source: <https://www.payscale.com/career-news/2019/03/linkedin-these-are-the-skills-companies-need-right-now>, March 2019



Employers Rate the Essential Need of Career Readiness Competencies

COMPETENCIES	WEIGHTED AVERAGE RATING*		
	2019	2018	2017
Critical thinking/problem solving	4.66	4.62	4.58
Teamwork/collaboration	4.48	4.56	4.43
Professionalism/work ethic	4.41	4.46	4.56
Oral/written communications	4.30	4.30	4.43
Digital technology	3.84	3.73	3.78**
Leadership	3.65	3.82	3.86
Career management	3.38	3.46	3.47
Global/multi-cultural fluency	2.78	3.01	2.85

Source: *Job Outlook 2019*, National Association of Colleges and Employers. *5-point scale, where 1=Not essential, 2=Not very essential,

<https://www.naceweb.org/career-readiness/competencies/the-four-career-competencies-employers-value-most/>

Problem Solving

Problem Solving With Zipline

<https://www.youtube.com/watch?v=z7RaFPT3DTE>

4:02 min

“65% of students will work with jobs that don’t exist today.”

-Google

Source: code.org/promote, May 2018

Empowering Innovation at Carlsberg

https://www.microsoft.com/en-us/ai/empowering-innovation?OCID=AID620863_OLA_22451876_242515988_113832897&activetab=pivot1%3aprimar3

.49 Min

Is this the Future??

Ford's Future Delivery Vehicle

<https://www.youtube.com/watch?v=WHWcilxNK2c>

1:41 min

KiwiCo, Inc.

Subscription service for Tinker Crates

<https://www.kiwico.com/>



Amazon's AWS Educate



The screenshot shows the AWS Educate website homepage. At the top left is the AWS logo. To the right are links for 'Contact Sales', 'Support', 'English', and 'My Account', along with a 'Create an AWS Account' button. Below the navigation bar is a search bar and a list of menu items: 'Products', 'Solutions', 'Pricing', 'Documentation', 'Learn', 'Partner Network', 'AWS Marketplace', and 'Explore More'. The main content area has a dark blue background with a geometric pattern. The headline reads 'Start Your Journey Through the Cloud'. Below it is a sub-headline: 'If you're 14 or older, join AWS Educate at no cost to build your cloud computing skills.*'. There are two buttons: a yellow 'Join AWS Educate' button and a white 'Login to AWS Educate' button.

What is AWS Educate?

- . Global Initiative for Students to Build Cloud Skills
- . Interactive challenges, hands-on activities
- . Self Paced
- . Students Earn Badges

Source: <https://aws.amazon.com/education/awseducate/14-and-older/>

Thank You PARENTS!

**Thank you for your support and
encouragement**

Meet Connor Krukosky, The Mainframe Kid

<https://www.youtube.com/watch?v=wJyiHsfJLEI>

4:59 Min



LinkedIn

www.linkedin.com

Job Sites



Buffalojobfinder.com , [Buffalo News](#), Tuesday Special Section

Buffalojobs.com

Dice.com

Glassdoor Jobs

Google for Jobs

Indeed.com

Jobs.com

Monster.com

Careerbuilder.com

Simplyhired.com

Wnyjobs.com

ZipRecruiter

Craigslist.com, often company name is unavailable

Resume Tips

- Include Cover Letters
- Perfect Grammar!
- Emphasize Experience
- Include Strong Key Words
- Scan Friendly

NEVER include social security number on resumes or applications!!

Birth Date is legally not required.

Interviewing

- Research the company
 - Have a list of questions ready
 - Make sure you understand the company and the position for which you are interviewing
- Be confident when you discuss your qualifications
- Be prepared to discuss technologies you enjoy
- Dress for success

Tips for Success



- When applying for positions online, be aware of job requirements
 - Keywords must 'match'
 - Resumes are selected electronically
- Be honest and ethical
- Work hard
- Develop a good rapport with peers, users and management
- Use common sense

Thank You!