Computing in the Core

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Mission

- Computing in the Core (CinC) is a non-partisan advocacy coalition of associations, corporations, scientific societies, and other non-profits that strive to elevate computer science education to a core academic subject in K-12 education, giving young people the college- and career-readiness knowledge and skills necessary in a technology-focused society. CinC encourages awareness building activities, policy changes and research at national, state, and local levels to build a strong foundation for the future of computer science instruction. It will engage federal and state policy makers, educators, the public, and the media to meet these goals.

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Why K-12 Computer Science Education?

Computer science enables innovation, economic growth and is an integral element of culture. It shapes how people interact with each other and the world around them, and it impacts jobs—financial services, health care, national defense and energy, among other fields. With skills and knowledge in this field:

- Students gain a deeper knowledge of the fundamentals of computing, which—as computing becomes ubiquitous—is a critical foundational knowledge that will serve them well throughout their lives
- Students are exposed to a field that drives innovation and in which job prospects remain strong despite the current extraordinary economic challenges
- Students gain critical knowledge and skills proven to bolster their success in higher education academic pursuits

No other subject will open as many doors in the 21st Century, regardless of a student's ultimate field of study or occupation, as computer science.

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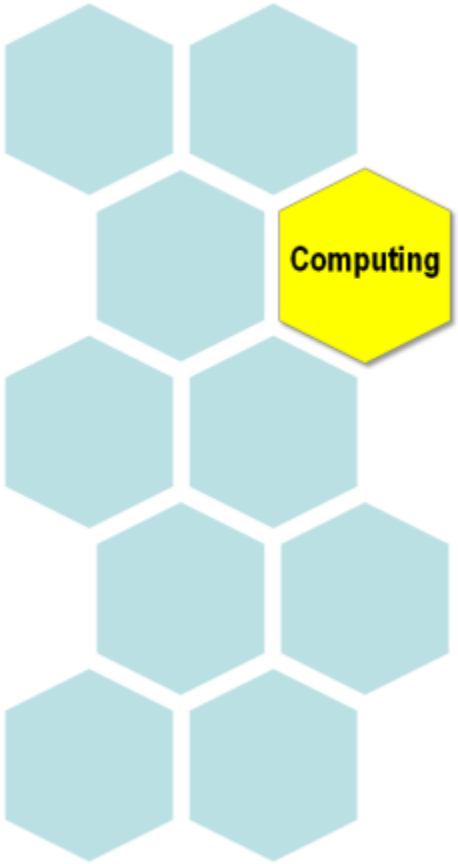
Quick Facts about Computing Jobs Through 2020



Computing and mathematics is one of the

TOP 10 fastest growing

major occupational groups 2010-2020.

150,000+ job openings in computing **annually**.

1 in every 2 STEM jobs **will be in computing in 2020.**

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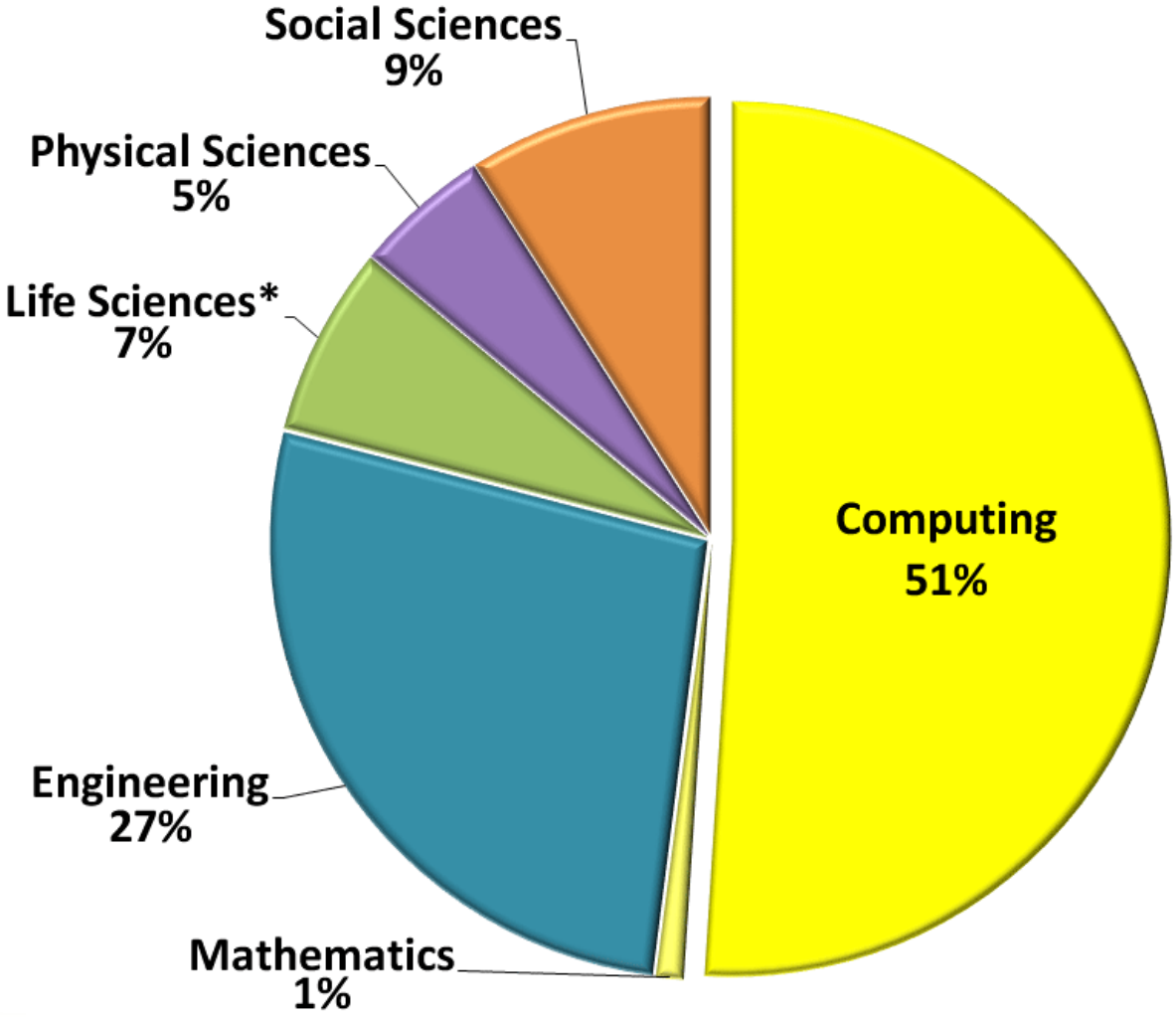
Sources: Jobs data are calculated from the Bureau of Labor Statistics (BLS), Employment Projections 2010-2020, available at http://www.bls.gov/emp/. Educational levels are calculated from BLS Occupational Projections Data, Employment 2010-2020, available at http://data.bls.gov/oep/ and the BLS Occupational Outlook Handbook 2010-2020, available at http://bls.gov/ooh/.

Where will the STEM Jobs be?

Projected Annual Growth of Total STEM Job Openings 2010-2020



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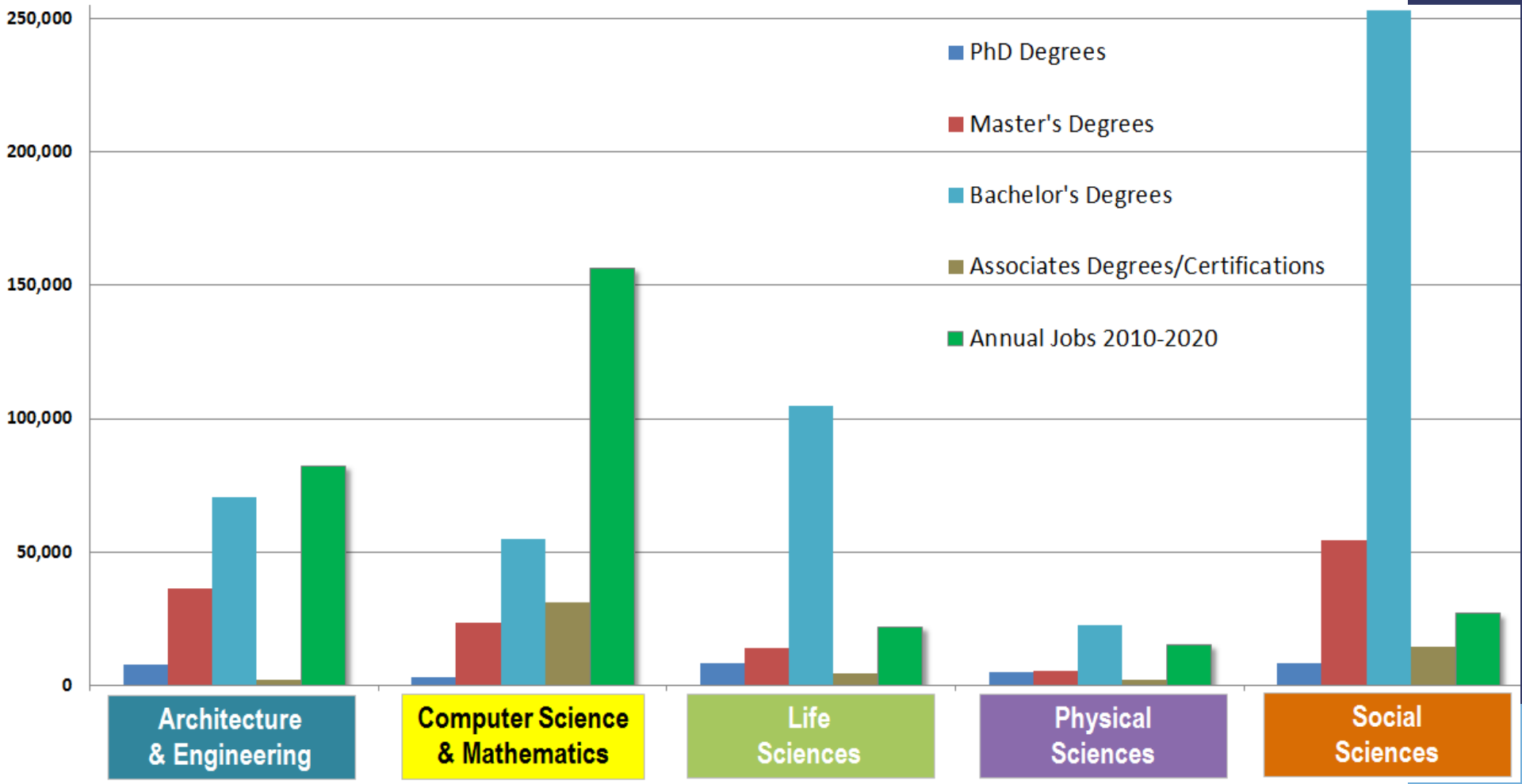
* STEM is defined here to include non-medical occupations.

Source: Jobs data are calculated from the Bureau of Labor Statistics (BLS), Employment Projections 2010-2020, available at http://www.bls.gov/emp/.

Where will the STEM Jobs be?

Degrees vs. Jobs Annually



Sources: Degree data are calculated from the National Science Foundation (NSF), Science and Engineering Indicators 2012, available at http://www.nsf.gov/statistics/seind12/appendix.htm. Annual jobs data are calculated from the Bureau of Labor Statistics (BLS), Employment Projections 2010-2020, available at http://www.bls.gov/emp/. STEM is defined here to include non-medical degrees and occupations.

Where will the U.S. Jobs be?

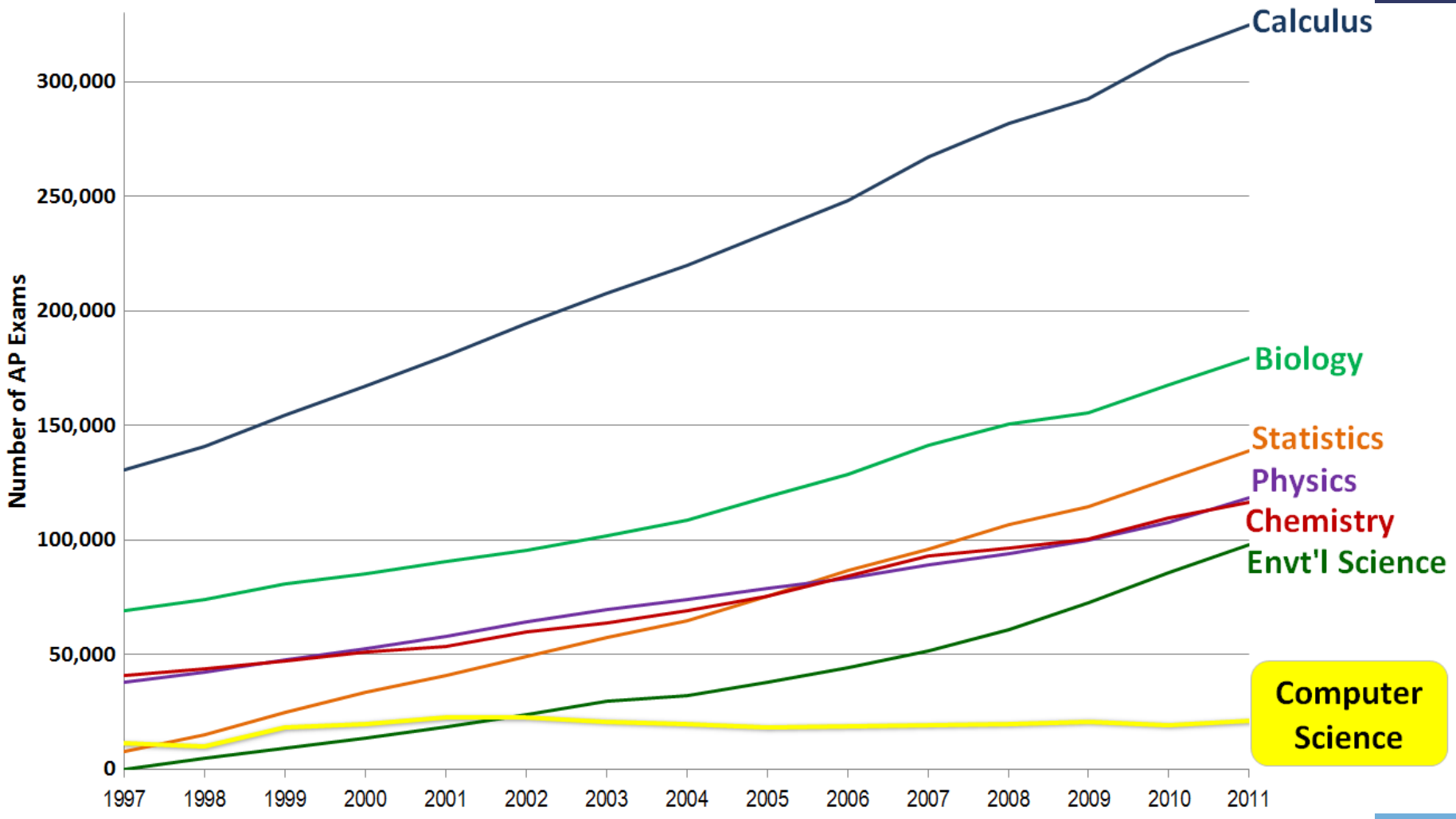
Top 10 Major Occupational Groups 2010-2020 and Average Salaries in May 2011

	Major Occupational Group	% Growth 2010-2020	2011 Average Annual Salary
1	Healthcare Support Occupations	35%	$27,370
2	Personal Care and Service Occupations	27%	$24,620
3	Healthcare Practitioners and Technical Occupations	26%	$72,730
4	Community and Social Service Occupations	24%	$43,830
5	Construction and Extraction Occupations	22%	$44,630
6	**Computing and Mathematical Occupations**	**22%**	**$78,730**
7	Business and Financial Operations Occupations	17%	$68,740
8	**Life, Physical, and Social Science Occupations**	**16%**	**$67,470**
9	Education, Training, and Library Occupations	15%	$50,870
10	Transportation and Material Moving Occupations	15%	$33,200

http://www.bls.gov/oes/current/oes_nat.htm.

High School Advanced Placement

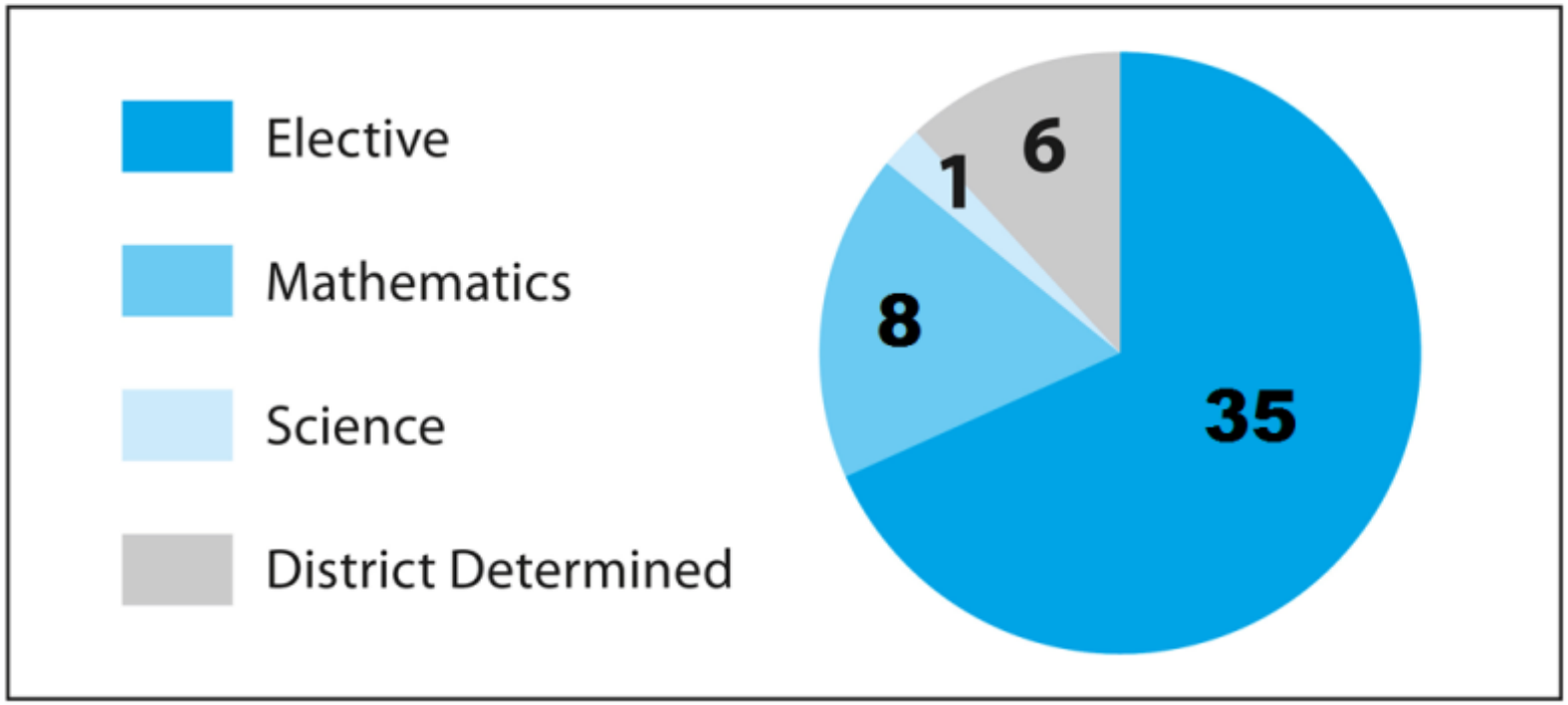
Exams 1997-2011



Source: College Board, Advanced Placement (AP) Exam Data 2011, available at http://professionals.collegeboard.com/data-reports-research/ap/data. Calculus represents the combined data of Calculus AB and BC. Physics represents the combined data of Physics B, C:Electricity and Magnetism, and C:Mechanics. Computer Science represents combined data of Computer Science A and B.

How Computer Science "Counts" In K-12

FIGURE 12 How Computer Science Courses Count Toward Graduation Requirements



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Source: ASSOCIATION FOR COMPUTING MACHINERY & COMPUTER SCIENCE TEACHERS ASSOCIATION, RUNNING ON EMPTY: THE FAILURE TO TEACH K-12 COMPUTER SCIENCE IN THE DIGITAL AGE (2010), at page 45, available at http://www.acm.org/Runningonempty.

Federal Recommendations

CinC makes the following recommendations to address K-12 computer science education's primary policy obstacles.

- Clearly define and include computer science education in education initiatives
- Invest in state planning and implementation grants for K-12 computer science education
- Build partnerships and national networks of support
- Create pre-service and professional development opportunities for prospective computer science teachers and those in classrooms
- Impanel a blue ribbon commission to review the computer science teacher certification crisis
- Ensure appropriate opportunities for computer science education and computer science teachers in existing programs

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State and Local Recommendations

- Clearly define and include K-12 computer science education in education initiatives
- Develop computer science standards and assessments that span grades K-12
- Develop courses to implement new computer science standards
- Ensure that courses count toward a student's core graduation requirements either as mathematics, science or computer science credits
- Expand computer science teacher professional development opportunities, recruit new computer science teachers and address teacher certification issues
- Expand access to computer science courses for under-represented populations

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