

# CSTA NATIONAL SECONDARY SCHOOL COMPUTER SCIENCE SURVEY 2015

## Methodology:

This survey instrument was developed by CSTA's Research Committee and was administered in spring 2015 to 10,182 high school teachers who defined themselves as computer science, computer programming, or AP computer science teachers. Survey invitations, which directed respondents to a Survey Monkey online survey, were emailed to teachers across the United States. In addition, CSTA's home page, Advocate Blog and social media channels featured a request with a link to the survey. A total of 1,354 people responded to the survey (a response rate of 13.3%). Of these responses, 1,354 were usable, the remainder having been eliminated because they were incomplete (contained no actual data). The results below represent the percentages and averages for those who answered each question.

## Results:

1. Does your school offer an after school computer science club and/or program?

Yes	73.7%
No	0.263

2. Does your school offer any introductory (or pre-AP) Computer Science (CS) courses?

Yes	89.4%
No	10.6%

3. What type of credit is earned by the course(s)? (Check all that apply.)

Computing	11.8%
Business	53.8%
Math	13.5%
Science	17.5%
Technology	17.4%
Other	14%

4. Are students required to take introductory CS?

Yes	63.4%
No	36.6%

5. How many students in your high school are enrolled in an introductory CS course?

1-10	4.4%
11-25	24.5%
26-50	53.0%
51-100	11.0%
101-150	3.6%
151-200	1.5%
200+	1.9%

6. What percentage of students enrolled in introductory CS are female? (Skip if your school is single-gender.)

0%	1.5%
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1-20%	24.2%
21-40%	25.1%
41-60%	48.4%
61-80%	0.2%
81-99%	0.2%
100%	0.3%

7. What percentage of students enrolled in introductory CS are members of underrepresented minority?

0%	2.7%
1-20%	25.1%
21-40%	6.1%
41-60%	60.3%
61-80%	1.9%
81-99%	2.4%
100%	1.5%

8. What content is covered in introductory CS? Please check all that apply.

Computer security	12.6%
Databases and information retrieval	8.3%
Ethical and social issues	21.7%
Game programming	79.0%
Graphics	16.2%
Hardware	18.6%
Logic applications in IT and IS	50.3%
Networks	6.7%
Problem solving	75.6%
Productivity software	47.6%
Programming	38.4%
Web development	16.1%
Other	4.1%

9. Please list the programming languages/software tools you use in your introductory CS course. (Check all that apply.)

Alice	10.5%
AppInventor	9.0%
C++/C#	48.2%
Greenfoot	19.5%
Java	17.6%
Java Script	10.0%
Python	54.3%
Scratch	60.8%
Visual Basic	7.1%
ECS (Exploring Computer Science)	48.0%
Bootstrap	0.8%
GUTS	0.1%

10. Do you currently offer the Computer Science Principles course?

Yes	66.2%
No	33.8%

11. How many students are enrolled in CS Principles (all courses in a school year)?

1-10	3.6%
11-25	5.1%
26-50	87.5%
51-100	2.7%
101-150	0.1%
151-200	0.1%
200+	0.8%

12. What percentage of students enrolled in CS Principles are female? (Skip if your school is single-gender.)

0%	4.8%
1-20%	7.3%
21-40%	25.1%
41-60%	61.9%
61-80%	0.6%
81-99%	0.2%
100%	0.1%

13. What percentage of students enrolled in CS Principles are members of an underrepresented minority?

0%	5.1%
1-20%	6.4%
21-40%	24.3%
41-60%	60.7%
61-80%	1.1%
81-99%	1.7%
100%	0.7%

14. Why do you not currently offer the Computer Science Principles course?

Not aware of the Computer Science Principles course	15.1%
Plan to offer 2015-2016 school year	12.4%
Plan to offer 2016-2017 school year (when becomes AP)	35.7%
Not planning to offer it	34.3%
We don't offer CS	2.4%

15. Does your school offer AP CS A?

Yes	78.7%
No	21.3%

16. How many students are enrolled in AP CS A (all courses in a school year)?

1-10	6.5%
11-25	31.9%
26-50	57.1%
51-100	3.3%
101-150	0.7%
151-200	0.3%
200+	0.2%

17. What percentage of students enrolled in AP CS A are female? (Skip if your school is single-gender.)

0%	3.4%
1-20%	19.8%
21-40%	7.6%
41-60%	68.6%
61-80%	0.5%
81-99%	0.0%
100%	0.2%

18. What percentage of students enrolled in AP CS A are members of an underrepresented minority?

0%	4.5%
1-20%	19.3%
21-40%	53.5%
41-60%	1.9%
61-80%	18.7%
81-99%	1.6%
100%	0.6%

19. Does your school offer computing courses other than introductory and AP CS?

Yes	88.0%
No	12.0%

20. What kinds of courses? (Check all that apply.)

Computing communications/media	9.8%
Computer graphics	59.3%
Game development	13.3%
Networking	21.8%
Programming	19.9%
Web design	23.9%
Other	11.8%

21. Is your district using Code.org curriculum?

Yes	66.1%
No	29.4%
I Don't Know	4.5%

22. Do the CS courses offered in your school have prerequisites?

Yes	75.8%
No	24.2%

23. What is the total number of students who take any CS course at your high school regardless of course or teacher?

1-10	3.2%
11-25	5.5%
26-50	62.2%
51-100	11.9%
101-150	8.3%
151-200	3.2%
200+	5.5%

24. How have CS enrollments changed in your school over the past three (3) years?

Increased	68.9%
Decreased	18.3%
Stayed about the same	12.8%

25. Are there students who could be take the CS course(s) your school offers but who are not?

Yes	93.5%
No	6.5%

26. Why? Please rank each reason below:

Very Common    Somewhat Common    Uncommon

Greater interest in other subjects	754	397	35
CS is perceived to be "geeky"	587	413	173
Elective courses are less "important"	730	387	79
Subject matter too difficult	625	458	99
No room in schedule/academic plan	1067	108	25
Perception of limited job opportunities	518	258	388
CS is perceived as male-dominated	616	42of 9	134

27. Please explain:

Variety of Answers

28. Under what department is CS offered in your school?

Computing	5.0%
Business	67.0%
Math	15.2%
Science	42.8%
Technology	51.1%
Career Technical	9.8%
Other	4.0%

29. Does your district or state require you to teach a specific CS course curriculum that includes specific content and outcomes?

Yes	64.3%
No	35.7%

30. Are these requirements enforced?

Yes	89.6%
No	10.4%

31. Additional Information

Variety of Answers

32. Do you use all or some of the standards outlined in the CSTA K-12 Computer Science Standards?

Yes	75.0%
No	25.0%

33. Please specify how you are using the CSTA K-12 Standards in your course(s):

Variety of Answers

34. If not, please tell us why you do not use the CSTA K-12 Standards.

Variety of Answers

35. What do you perceive to be the greatest challenges in teaching CS? Please rank each challenge below:

	Great Challenge	Moderate Challenge	Minor/No Challenge
Lack of hardware/software resources	606	203	279
Lack of curriculum resources	810	232	226
Lack of teacher subject knowledge	666	381	222
Lack of student subject knowledge	628	450	183
Lack of support/interest by school staff	698	404	167
Lack of student interest/enrollment	658	474	134
Difficult subject matter	637	490	140
Rapidly changing technology	837	274	161

36. What do you perceive as the greatest professional development needs? Please rank each need below:

	Great Need	Moderate Need	Minor/No Need
Time for training	874	365	39
Sufficient training opportunities	825	383	69
Training facilities and resources	752	405	113
Training cost (and lack of reimbursement)	1014	166	90

37. What do you believe are the most effective methods for delivering professional development to CS teachers? Please rank each method below:

	Most Effective	Somewhat Effective	Least Effective
College courses	339	796	136
Computer-based tutorials	394	825	53
Online resources	446	790	37
Workshops/Seminars	414	845	19
Professional conferences	269	926	73
Networking with others	301	918	47

38. Have you taken at any time a computer science teaching methods course?

Yes	64.9%
No	35.1%

39. If so at what university or college?

Variety of Answers

40. How many students attend your school?

1-100	1.5%
101-250	3.4%
251-500	57.8%
501-1000	11.8%
1001-2000	17.0%
2001+	8.5%

41. Is your school:

a public school	90.4%
a private school	9.6%

42. Is your school:

a single gender school	41.4%
a mixed-gender school	58.6%

43. What grade levels are included at your school? (Please check all that apply.)

9	44.2%
10	84.4%
11	59.6%
12	45.7%

44. What percentage of students at your school speak a language at home other than English?

0%	1.6%
1-20%	29.2%
21-40%	22.2%
41-60%	43.3%
61-80%	2.3%
81-99%	1.3%
100%	0.1%

45. What percentage of the students in your school qualify for free or reduced lunch?

0%	4.1%
1-20%	15.5%
21-40%	50.5%
41-60%	20.5%
61-80%	4.8%
81-99%	3.3%
100%	1.3%

46. Which of the following best describes your school's location?

Rural	8.6%
Suburban	66.1%
Urban	25.1%
Online	0.2%

47. How many years have you been teaching?

1-3 years	15.1%
4-7 years	46.6%
8-14 years	16.9%
15+ years	21.5%

48. How many years have you been teaching CS?

0 years	1.9%
1-3 years	25.3%
4-7 years	9.3%
8-14 years	12.2%
15+ years	51.3%

49. What percentage of the courses you teach are CS courses?

0-25%	11.3%
25-50%	22.8%
50-75%	45.5%
75-100%	20.5%

50. What is your gender?

Female	24.7%
Male	74.2%
Transgender	0.1%
Other	0.0%
Decline to Answer	1.0%

51. What is your age?

22-30	2.8%
31-40	47.3%
41-50	27.8%
51-60	15.7%
61+	4.2%
Decline to Answer	2.2%



52. Please add any comments to clarify or elaborate on any of your responses:  
Variety of Answers

53. Are you already a CSTA member?

Yes	96.0%
No	4.0%

54. Please check one or both of the options you are interested in.

Add/Renew Membership	42.9%
Enter the Raffle	97.4%

The remainder of questions were demographical in nature and cannot be shared; such as name, address, etc.