SIDEBAR

Focus on Computer Science

Recent years have seen a surge in new developments in computer science education, including a Presidential Memorandum from the Trump administration focused on expanding access to computer science education, the inclusion of computer science in the Every Student Succeeds Act, the launch of a new Advanced Placement computer science course, a growing number of states allowing computer science to count toward high school graduation, and the release of a computer science education framework.

A Presidential Memorandum, signed in September 2017, set a goal of devoting at least $200 million per year in grant funds toward expanding access to high-quality STEM and computer science education.* In conjunction with the Presidential Memorandum, several of the nation's largest technology companies pledged a total of $300 million to support computer science education over a five-year period.†

An earlier federal initiative, Computer Science for All, was announced by the Obama administration in early 2016. Although Congress did not approve the specific funding called for in the Computer Science for All initiative, other efforts related to it, such as investments by the National Science Foundation and the Corporation for National and Community Service to support and train computer science teachers, are moving forward.

The Every Student Succeeds Act specifically includes computer science as part of science, technology, engineering, and mathematics education subjects and includes computer science with other core subjects, such as English, reading, science, and mathematics, in its definition of a "well-rounded education."‡

The College Board's newest Advanced Placement course, Computer Science Principles, developed with the support of $9 million in funding from NSF, was offered for the first time during the 2016–17 school year. The course, designed to increase the number and diversity of high school students taking computer science, focuses on several topics in addition to programming, including working with data, computational thinking processes, algorithms, understanding the Internet, and cybersecurity.§

In 2017, 31 states and the District of Columbia allowed students to count a computer science course toward high school graduation requirements, up from 12 states in 2013.‖

The Association for Computing Machinery, Code.org, Computer Science Teachers Association, Cyber Innovation Center, and National Math and Science Initiative collaborated with states, districts, and the computer science education community to develop conceptual guidelines for computer science education. The K–12 Computer Science Framework outlines the essential computer science concepts and practices that students should know by the end of grades 2, 5, 8, and 12.#

* https://www.whitehouse.gov/the-press-office/2017/09/25/memorandum-secretary-education

† https://www.nytimes.com/2017/09/26/technology/computer-science-stem-education.html

‡ https://www.gpo.gov/fdsys/pkg/BILLS-114s1177enr/pdf/BILLS-114s1177enr.pdf

§ https://advancesinap.collegeboard.org/stem/computer-science-principles

‖ https://code.org/action

#https://k12cs.org/