# Moving Beyond Computer *Literacy*
Why Schools Should Teach Computer *Science*

Computer Science Gives Students Vital 21st Century Skills

These skills strengthen local community, national innovation, and opportunities for youth. Computer Science — not computer literacy — underlies most innovation today, from biotechnology to cinematography to national security. Yet the majority of U.S. schools require only that students use computers. Seldom do schools prepare students to innovate and create the new technologies that drive local and national economies. This ability to innovate with technology is also important for students' future success and ability to make a difference in a global society.
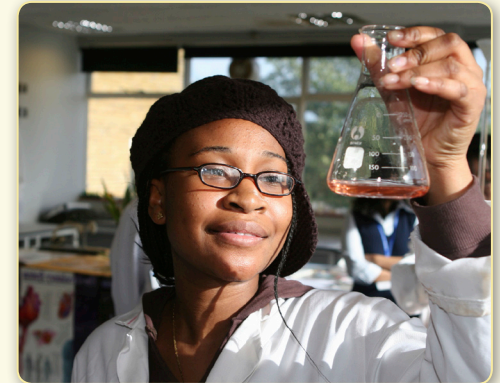
Computer Science Means Rewarding Careers

Jobs are plentiful, interesting, and flexible. The U.S. Department of Labor predicts that computer science-related jobs will be among the fastest growing and highest paying over the next decade. Job prospects have remained strong despite economically challenging times. Computer scientists also enjoy a wide range of career options since all industry sectors today involve computing (e.g., the arts, film, finance, health care, journalism, manufacturing, music, security).

- Five of the fastest growing occupations are computing occupations.

- By 2016, there will be 1.5 million computing-related jobs available.

- Computing-related jobs are among the highest entry-level salaries of any bachelor's degree.

Computer Science: More than Just Using Technology

Computer science teaches students design, logical reasoning, and problem solving — all valuable well beyond the computer science classroom. The ability to create and adapt new technologies distinguishes computer science from computer literacy, which focuses more on using existing technologies (e.g., word processing, spreadsheets).

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What can you tell school decision-makers about computer science?

Tell them that computer science …

- **Provides 21st century skills necessary for innovation and translates to high-paying, in-demand jobs.** Emphasize that computer science is increasingly necessary for community improvement, students' future opportunities, and local and national innovation. Use facts to dispel myths that computing jobs are disappearing (see flip side and www.ncwit.org/schools).

- **Differs from computer *literacy*.** Computer science differs from computer literacy (see flip side). Computer science needs to be part of conversations about math-science-technology reform.

- **Can make curriculum more relevant for students.** Computer science courses can tap into students' interest in technology, helping them become technology innovators. Other teachers can build on these skills, allowing students to design technical solutions to problems in science, math, social studies, the arts, and literacy. This can make these courses more relevant for youth, potentially improving their engagement and achievement in these areas.

- **Can help educators better meet accountability goals.** Because a key component of computer science involves the use of critical thinking and problem solving, computer science courses and units can help schools better meet some existing state standards in these areas, as well as some math and science standards.

What can your school do to successfully incorporate computer science education?

- **Implement computer science classes.** Provide rigorous and engaging computer science courses. Excellent curricula are available, as are additional units for integrating computing concepts into other content areas.

- **Allow computer science to count toward graduation.** Students' schedules are overcrowded, making electives difficult. Allow students to count computer science courses as math or science graduation credit.

- **Make courses accessible for all.** Recruit students who are underrepresented in computer science and use inclusive pedagogies in these courses.

- **Improve teacher preparation and professional development.** Expand teacher certification requirements to include computer science. Provide professional development for teachers who teach, or would like to teach, computer science.

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