THE WHY BEHIND COMPUTER SCIENCE

CROSS-CURRICULAR CONNECTIONS AND SUPPORT

How can CS support learning in other content areas? There are many opportunities for cross-curricular connections as students learn to be creators of technology and not just passive consumers of technology. Computational thinking happens in almost all academic settings. It happens when we recognize and define problems through decomposition, use pattern recognition or develop abstractions, and when we think of solutions to problems as algorithms or computational steps. These skills are common in math, science, and other subject areas.

- ISTE series: Computational Thinking
- Ellipsis Education blog post: Interdisciplinary Connections: Science

CAREERS OF TOMORROW

How does CS help prepare students for the jobs of the future? Introducing computer science in the K-12 experience opens doors for students to pursue computer science majors in college. Beyond the obvious concentration in computer science, there are many related areas of study like computer information systems, information technology, data science, and computer systems networking. Even non-CS majors, like business, biology, and English use technology constantly to communicate ideas.

- Ellipsis Education page: My STEM Careers
- Code.org infographics: CS education and careers

SEL + 21ST CENTURY SKILLS = DIGITAL CITIZENSHIP

What about the other skills we want our students to gain in our time with them? Social-emotional learning and 21st Century Skills are pervasive in educational settings as parents, employers, and other stakeholders have come to understand that students need more than an encyclopedic list of facts to succeed in building strong relationships and navigating school and careers. As technology continues to touch every aspect of our day, Digital Citizenship has become a conduit through which social-emotional learning and 21st century skills can be practiced.

- Ellipsis Education webinar: Connecting the 4 Cs and Computer Science

CREATIVITY AND SELF-EXPRESSION

Why is creativity important? First, being creative helps us deal with uncertainty. It gives us confidence going into new situations, knowing you can solve problems. Next, it helps us see the big picture. When we are creative, we are not getting bogged down in details; we can take a step back and assess the larger situation. Finally, creativity encourages us to learn and interact with others. The more knowledge we share with one another, the more we can draw upon to develop new ideas.

- Ellipsis Education blog post: Creativity in Computer Science
- Edutopia article: 12 Picture Books to Motivate Young Makers