Technology *integration*

COMPUTER SCIENCE TEACHES STUDENTS DESIGN, LOGIC AND REASONING, PROBLEM SOLVING AND COLLABORATION - ALL OF WHICH HAVE VALUE WELL BEYOND THE COMPUTER SCIENCE CLASSROOM-

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.   www.ncwit.org

Computer Programming

Is also known as coding. It is a part of the computer science curriculum. Formally, coding is a process that leads from an original formulation of a computing problem to executable programs.

Simply put, the language in which a program is written to accomplish a task. The task can be a website, a video game, an app, business application software, or any other digital media or web tool you can imagine.   Without coders, we wouldn't have use of the most of the internet, game and phone ap-plications we use today.

ISTE
Connected learning. Connected world.

STANDARDS FOR STUDENTS AND TEACHERS

Teacher Standards*:*
- *Facilitate and inspire student learning and creativity*
- *Design and develop digital age learning experiences and assessments*
- *Promote and model digital citizenship and responsibility*
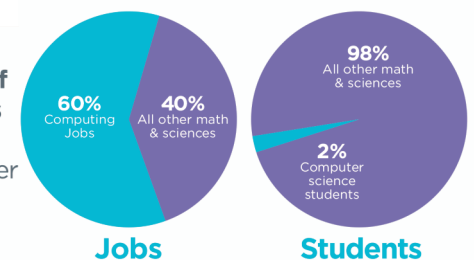- *Model digital age work and learning*

Student Standards:
- *Creativity and innovation*
- *Communication and collaboration*
- *Research and information fluency*
- *Critical thinking, problem solving, and decision making*
- *Digital citizenship*
- *Technology operations and concepts*

For the full ISTE standards please visit: *www.iste.org*

The job/student gap in computer science

Less than 2.4% of college students graduate with a degree in computer science. And the **numbers have dropped since** last decade.

Jobs: 60% Computing Jobs, 40% All other math & sciences

Students: 98% All other math & sciences, 2% Computer science students

Jobs   **Students**

code.org

One of the best, most comprehensive websites available. From tutorials to curriculum, you will find everything you need here.

The format allows you to stay ahead of your students by first learning the programming language you choose. As a teacher, you create a classroom, with individual log-ons for your students. At the end of each session they complete, there is an award certificate, recognizing their achievement.

Additionally, they offer professional development, the potential for paid teacher stipends, and grant opportunities.

codecademy.org is another great website to use for learning and teaching computer programming. As a teacher, you begin as a students and earn badges of completion along the way. Once you earn the badges required for a specific language, you can then gain access to the teacher center. It is in the teacher center that you can design your own class using the platform and programming available on codecademy.org.

Another cool feature of this website is that you can experiment with Ruby, Python and Java without having the IDE. You can also share your projects with your friends or others in the coding community.

Codecademy
KIDS CODE ACADEMY

Create stories, games, and animations
Share with others around the world

TRY IT OUT   SEE EXAMPLES   JOIN SCRATCH (it's free)

A creative learning community with 5,233,954 projects shared

Scratch.com contains probably the easiest gaming code to learn, especially for young learners. It's platform is nearly identical to the drag and drop gaming on code.org. The cool thing about this website, is that not only is it a coding program, but also a community where you can share your games, as well as see others games that have been created. There is also an extensive help menu.

Websites of resource

www.code.org
www.codeacadmey.org
www.coderdojo.com
www.alice.org
www.scratch.mit.edu
www.edutopia.org
www.computer.org
www.www.ncwit.org
www.p21.org
www.csta.acm.org
www.exploringcs.org/
www.livecode.com

The Alice project was developed by Carnegie Mellon University in 1999. Alice is a free teaching tool designed to be a student's first exposure to object-oriented programming. It allows students to learn fundamental programming concepts in the context of creating animated movies and simple video games. In Alice, 3-D objects (e.g., people, animals, and and vehicles) populate a virtual world and students create a program to animate the objects. The programming format is a drag and drop, but uses the same commands found in C+++, Java, and C#

Alice
Aprender a programar con gráficos 3D interactivos
un regalo para usted de
Carnegie Mellon

Keys to 21st Century Skills

While searching for the perfect app, we always accept their limitations. Sometimes we use multiple apps to web tools to accomplish what we need. A person that knows how to code, will never have to settle for what already exists.