

CS Resources for Educators, Students, and Parents

A world-wide leader in computer science education and research, CS @ ILLINOIS equips its students to become leaders of the Digital Revolution and to change our world in ways previously not imagined. CS underpins just about every aspect of modern life: the arts, science, business, medicine, and engineering. These skills are highly sought-after in industry and academia and result in many lucrative, impactful, and fulfilling career opportunities.

This list of local and national resources and activities is intended to help encourage engagement in computing.

CS @ ILLINOIS K-12 Programs

CS @ ILLINOIS has developed a series of outreach programs targeted especially for our local community to raise awareness about and interest in CS, including the ChicTech Retreat, the Gems Computer Science Camp for Girls, 4-H Computer Connections, and Sail. The department also participates in Hour of Code, as well as the National Center for Women & Information Technology Aspirations in Computing Program. For more, see cs.illinois.edu/engage/k-12-outreach.

College of Engineering Outreach

Engineering Open House | eoh.ec.illinois.edu

This annual student-run event (held this year on March 9-10, 2018) brings students and families to campus to learn first-hand about exciting opportunities in Engineering, including CS.

GAMES (Girls' Adventures in Mathematics, Engineering, and Science) | go.illinois.edu/games

These camps, led by Women in Engineering student organization, feature tracks in CS and robotics, bioengineering, chemical engineering, environmental engineering & sustainability, aerospace engineering, Girls Learning Electrical Engineering (GLEE), Girls Learning about Materials (GLAM), and Girls Building Awesome Machines (G-BAM).

Mathematics, Science, & Technology Education (MSTE), College of Education

CTRL-Shift | ctrlshift.mste.illinois.edu

Comprised of K-12 school practitioners, community members, entrepreneurs, plus Illinois faculty & staff, this group discusses CS in the K-12 schools as well as support and research for school-based implementation of computational thinking.

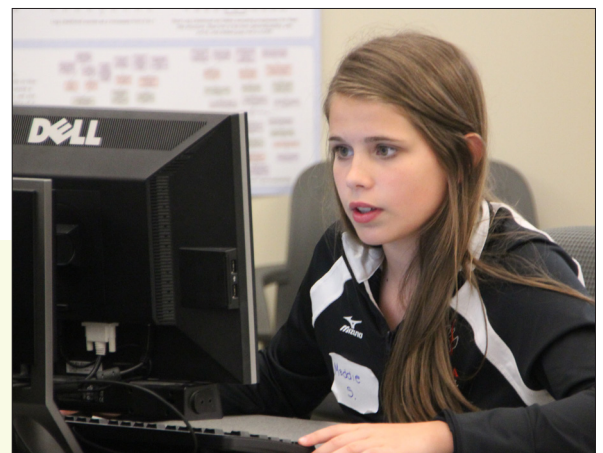
National Outreach Efforts

Code.org | grades K-12 | code.org

Code.org is a nonprofit dedicated to expanding access to CS, and increasing participation by women and underrepresented students. Their vision is that every student in every school should have the opportunity to learn CS. They believe CS should be part of core curriculum, alongside other courses such as biology, chemistry or algebra. Visit their site to access their free curriculum, workshops, tools, and to engage in their programs.

The National Center for Women & Information Technology | ncwit.org

NCWIT is a non-profit community of more than 600 universities, companies, non-profits, and government organizations nationwide to increase women's participation in computing and technology. NCWIT provides resources for recruiting, retaining, and advancing women from K-12 and higher education through industry and entrepreneurial careers.



Curriculum Resources

Codecademy | grades 9–12 | [codecademy.com](https://www.codecademy.com)

Classes for learning JavaScript, Java, Python, Ruby, and HTML/CSS.

Hopscotch | grades 3–12 | gethopscotch.com

IOS application used to design games and share them.

Khan Academy | grades 6–12 | khanacademy.org/computing/computer-programming

JavaScript and HTML/CSS video tutorials and challenges. Range from drawing basic shapes to making interactive webpages. Gives students the tools to make games, animations and webpages.

Lightbot | grades 4–12 | lightbot.com

Students lead a robot through a series of puzzles while learning programming principles.

Scratch | grades K–12 | scratch.mit.edu

Students build their own games and animations with colored code blocks. Step by step tutorials. Students can create teams and work on projects together. Lots of examples of other people's projects.

Tynker | grades K–8 | tynker.com

Variety of activities based on the student's interests and age.



CS Clubs

Google CS First | grades K–12 | cs-first.com

Plans for a variety of CS clubs each with a different focus. Includes activity plans.

Girls Who Code | girlswhocode.com

Nonprofit organization working to close the gender gap in the technology and engineering sectors.

Additional Resources

Makey Makey | all ages, hardware | makeymakey.com

Fab Lab | all ages, local community resource | cucfablab.org

Articles on computer science curriculum

“Coding in the Classroom: A Long-Overdue Inclusion” — edutopia.org/blog/coding-classroom-long-overdue-inclusion-merle-huerta

“15+ Ways of Teaching Every Student to Code (Even Without a Computer)” — edutopia.org/blog/15-ways-teaching-students-coding-vicki-davis

“Add Coding to Your Elementary Curriculum . . . Right Now” — edutopia.org/blog/add-coding-elementary-curriculum-now-matt-harrell

“Create a Family Coding Day for Hour of Code” — edutopia.org/blog/family-coding-day-hour-of-code-sam-patterson

Questions? Want to learn more? Please email cs-outreach@illinois.edu.



cs.illinois.edu