



## CS Resources for Educators, Students, and Parents

A world-wide leader in computer science education and research, Illinois Computer Science 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.

### Illinois Computer Science K-12 Programs

Illinois Computer Science 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, Girls Who Code, 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](https://cs.illinois.edu/engage/k-12-outreach).

### College of Engineering Outreach

**Engineering Open House** | [eoh.ec.illinois.edu](http://eoh.ec.illinois.edu)

This annual student-run event (held this year on March 8-9, 2019) brings students and families to campus to learn first-hand about exciting opportunities in Engineering, including CS.

**WYSE Summer Camps at Engineering Illinois** | <https://wyse.engineering.illinois.edu/summer-camps/>

Worldwide Youth in Science and Engineering camps are designed to provide STEM-interested students the opportunity to experience advanced curricula, world-class facilities, and an “away from home,” collegiate experience at one of the best engineering schools in the nation and the world.

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

**CTRL-Shift** | [ctrlshift.mste.illinois.edu](http://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.

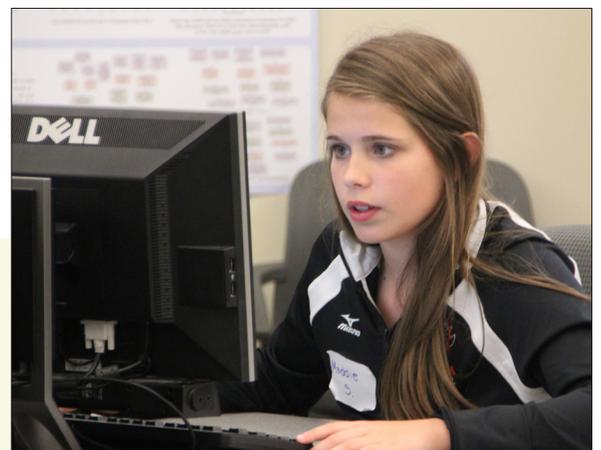
### National Outreach Efforts

**Code.org** | grades K-12 | [code.org](http://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](http://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](https://gethopscotch.com)

IOS application used to design games and share them.

**Khan Academy** | grades 6–12 | [khanacademy.org/computing/computer-programming](https://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](https://lightbot.com)

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

**Scratch** | grades K–12 | [scratch.mit.edu](https://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](https://tynker.com)

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



## CS Clubs

**Google CS First** | grades K–12 | [cs-first.com](https://cs-first.com)

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

**Girls Who Code** | [girlswhocode.com](https://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](https://makeymakey.com)

**Fab Lab** | all ages, local community resource | [cucfablab.org](https://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](https://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](https://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](https://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](https://edutopia.org/blog/family-coding-day-hour-of-code-sam-patterson)



[cs.illinois.edu](https://cs.illinois.edu)