Computer-Based Coding Resources

- Bitsbox (Free tool, paid supplemental materials, ages 10+) is a simplified JavaScript tool for fun, visual mobile app design.
- Code.org (Free, ages 8+) provides high quality coding puzzles and videos.
- Codecademy (Paid subscription pro: for teens and adults) provides self-guided tutorials in many languages.
- Code Combat (Free w/premium content, 13+) is a video game you win by writing JavaScript code.
- Coder Dojo: (Free, ages 7-17) Lists a global network of free, volunteer-led, community-based programming clubs for young people. They can learn to code, build a website, create an app or a game, and explore technology in an informal, creative, and social environment.
- Codefights (Mostly free, 13+) is a fun competition forum for honing skills.
- CodeHS: (Paid subscription) CodeHS is a comprehensive teaching platform for helping schools teach computer science
- Codepen (Mostly free, 10+) is an online code editor for front-end projects, with handy aids and sharing features.
- Code School: (Paid Subscription Licenses) HTML/CSS, Ruby, PHP, Python, Git, JavaScript, Elixir, .NET, iOS, and SQL databases
- Free Code Camp (Free, teens and adults) includes 1000+ hours of curriculum for motivated self-learners, with the objective of entry-level web developer jobs.
- Khan Academy (Free website, ages 10+) provides tutorial videos, lessons and challenges in a visual simplified JavaScript.
- Lynda (Paid subscription: for teens and adults) provides videos and other materials.
- MIT App Inventor (Free, ages 12+) provides an environment for block coding of mobile apps.
- MIT Open Courseware: (Free, teen and adult) is a web-based publication of virtually all MIT course content
- Pencilcode (Free, ages 8+) allows block-coding projects.
- Prenda: (Paid licenses per year) Hybrid between online and offline approaches. Software tracks progress and guides through various online coding services
- Scratch (Free, ages 8+) is an open platform for games and animations.
- Stencyl (Free for web, $199/year for iOS) is a block-game design tool with surprising flexibility.
- Thimble (Free, 13+) is a Mozilla-sponsored online text editor.
- Teaching Kids Programming: TKP is volunteer programmers and teachers who write TKPJava courseware
- Treehouse (Paid subscription: for teens and adults) provides videos and tutorials in a variety of programming languages.
- Thunkable (Free to start, ages 12+) is similar to MIT App Inventor with a simpler interface and more support
- Tynker (Paid per license/ $50 per student or class license $3800/year) is a block coding app with Minecraft mods, build games, and hardware integration for robots and drones
- W3 Schools: (Free, teen and adult) World's largest web developer site with tutorials and examples HTML, CSS, XML, JavaScript

Integrating Hardware

- Arduino: (Ages 8+) Arduino is a popular tool for IoT product development as well as one of the most successful tools for STEM/STEAM education

- Microsoft Make Code: (Kids, teens, and adults) This block editor with hardware integration brings computer science to life for all students with fun projects, immediate results, and both block and text editors for learners at different levels
- Bloxels and Bloxels Edu: (Ages 5+ with assistance, ages 8+ solo) Students gain greater understanding of topics like design logic and computer science while creating their own video games
- Buzzbot and Muttbot: (Ages 8+) STEM learning with Jimu Robots enables kids to learn coding from a young age. Jimu Robot Kits will enable children to learn and retain basic coding skills for their future academic and real world applications.
- Code-A-Pillar: (Ages 3+) This learning toy encourages experimentation while developing important skills like problem solving, planning & sequencing and critical thinking
- Cubelets: (Ages 8+) It has never been easier to code your own Cubelets robot! Cubelets Blockly is the perfect platform to learn to program your own robots!
- Bee Bots: (Ages 3+) This colorful, easy-to-operate, and friendly little robot is a perfect tool for teaching sequencing, estimation, problem-solving, and just having fun
- Cubetto: (Ages 3+) Cubetto is the friendly wooden robot that will teach your child the basics of computer programming through adventure and hands on play
- Dash and Dot: (ages 6+) Robots that teach your kids to code while they play.
- Lego Mindstorms: (Ages 10+) Use blocks to learn to program the EV3 Lego robot
- Makey Makeys: (Ages 3+) Makey Makey Classic works through opening and closing circuits, just like any other button. Instead of the circuit being closed underneath your keyboard, the circuit is closed through the conductive objects you connect with alligator clips like your hand or your lunch or some tinfoil. When the circuit is closed, the Makey Makey sends a command to your computer, just like when a button is pressed on a keyboard.
- Osmo Coding and Osmo Coding Jam: (ages 6+) These interactive games teach logic skills and problem solving. Ipad is required for use.
- Ozobot: (Ages 8+) Use this small robot with the Ozoblockly app to learn coding on a tablet. There is also an offline option to learn programming with color markers to control the Ozobot
- Sphero Robots: (Ages 8+) Teaches coding by incorporating robotics and technology with collaborative STEAM activities, nurturing students' imaginations

Mobile Apps to Practice Coding

- Lrn (Free, teens and adults) helps you memorize JavaScript syntax through Duolingo-style quizzes on the phone
- Swifty (Free to start, teens and adults) is the same as Lrn for iOS programming

Paper Resources

- Beanz: Magazine for Kids, Code, and Computer Science (Paid subscription, price varies b/t online or online & print)
- Code: deck ($10 purchase for adult developers) is a card game to reinforce concepts
- CS Unplugged (Free download for ages 8-18) is a collection of in person activities designed to introduce coding concepts

Tablet Apps

- The Foos (Free app, ages 5-10) provides a block-based Hour of Code

- Hopscotch (Part free, part paid, ages 3-8) is a block-coding app
- Kodable (First 8 weeks free, grades K-5) is a block-coding app
- Scratch Jr (Free, ages 3-8) allows block coding without requiring any reading
- Swift playgrounds (Free, 8+) is an iPad app from Apple to teach iOS programming