AROUND THE WORLD

Coding for kids

Authoring code for computer programs used to be a job for tech specialists, but writing code is becoming part of basic literacy for kids, who may need to know coding for their careers and leisure pursuits.

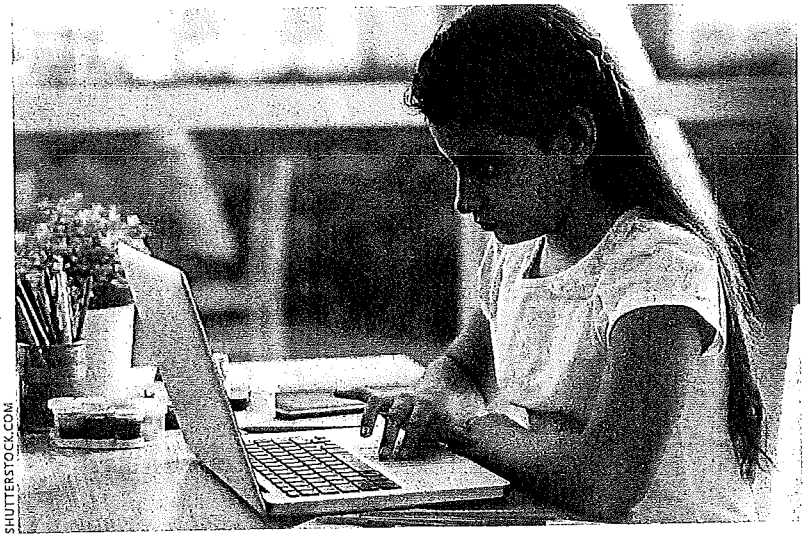
To make coding easy for and accessible to school-age children, the Seattle-based nonprofit Code.org in 2013 launched **Hour of Code**, a global movement supported by partners such as Microsoft, Apple, Amazon, Boys & Girls Clubs of America, and the College Board.

"Hour of Code" refers to tutorials that take about an hour each to complete. They can be used any time, but are especially promoted in schools during a **computer-science education week** each December **(Dec. 7–13 in 2015)**.

During last year's Hour of Code week, more than 60 million participants, mostly K-12 students, in 180 countries, worked on coding puzzles that could be made into interactive smartphone and tablet apps.

Hour of Code features TouchDevelop, a Microsoft application that allows the user to author code via a touchscreen that synchronizes data and execution among participants via the cloud. The tutorial guides students through a 20-step process that allows them to modify virtual puzzle games with names such as *Monster Slicer* and *Falling Rocks*.

Students drop and drag rectangles that interlock, much like building with Lego bricks in the real world. Each rectangle represents a small bundle of code instruction. Students tap a link beside the "create" box on their computer screen to see the code prebundled into each rectangle. By this means, they see that adding a series of code instructions causes actions to happen in the game or puzzle.



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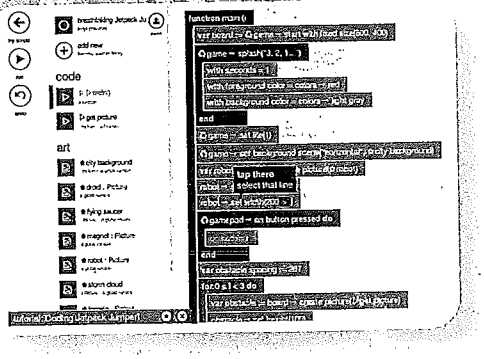

Students can modify virtual puzzle games such as *Jetpack Jumper* (left) via the Microsoft application TouchDevelop, which allows the user to author code. *Jetpack Jumper* code is shown below.

More complex coding is taught as part of Code.org's multilesson curriculum options, which vary for elementary-, middle- and high-schoolers.

Code.org wants to see computer science become a standard part of all K-12 schools' core curriculum.

Another kid-coding project, **Scratch**, began in 2007. The website scratch.mit.edu, launched by the Lifelong Kindergarten group at Cambridge, Massachusetts-based MIT Media Lab, is geared to 8- to 16-year-olds. The kids use Scratch to create interactive stories, games and animations that can be shared by multiple players around the world.

Scratch Help offers online tutorials that show kids how to get started. A column of blocks is divided into categories, such as "sound" or "motion." The coder is prompted to choose a block, and drop and drag it into the "script" area. Each block interlocks with the others, together bundling code that causes actions and sounds to occur with a click of the mouse. For each project on the Scratch website, kids can click "See Inside" to see the code that runs the project.

Other user-friendly programs that teach coding to kids include **Khan Academy**, known for its math games, and **Code Monster**, an interactive website that walks kids through a series of coding exercises. One box displays code. The other shows what the code does. For more information about **free websites that teach coding for kids**, visit mommypoppins.com/coding-kids-free-websites-teach-learn-programming.

–Scott Driscoll