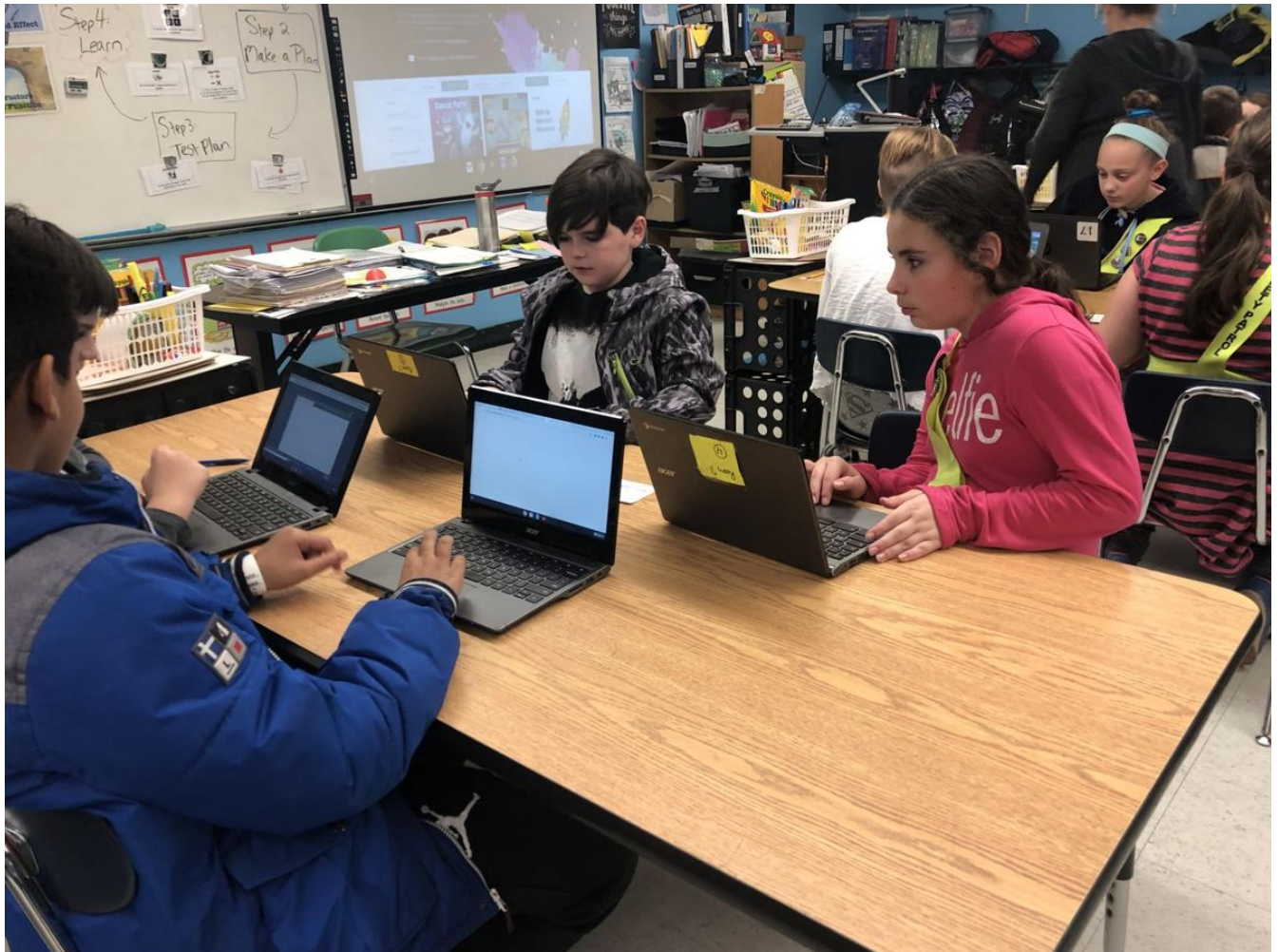https://www.ricentral.com/coventry_courier/tiogue-elementary-school-students-learn-the-basics-of-coding/article_e31e09e6-fa42-11e8-bf1e-83c26e79d12d.html

FEATURED

Tiogue Elementary School students learn the basics of coding

Kendra Port/klolio@ricentral.com   Dec 7, 2018 Updated 17 hrs ago

Photos by Kendra Port

COVENTRY – According to code.org and the Computer Science Education Week program, there are precisely 570,926 computer science related jobs across the country right now. In Rhode Island, there are 2,037 open computing jobs waiting to be filled, and only 348 computer science

graduates to fill them. This week students of all grade levels at Tiogue Elementary School and schools across the country participated in computer science activities as part of the Hour of Code initiative.

It's becoming increasingly clear that the country needs more trained and knowledgeable coders to fill jobs in areas like computer programming and software development.

In 2016 the state's department of education and Governor Gina Raimondo launched a new initiative called CS4RI (Computer Science For RI) designed to bring high quality computer science learning experiences to students at all grade levels throughout the state. The goal was and is still to have computer science taught in every public school in the state, a goal that was reached by December 2017. Out of the nationwide push for more computer science based learning came the national program Hour of Code, which students across the district, state and country participated in this week.

Hour of Code started out as a one-hour introduction to computer science. The goal was to "demystify code," and to show that anyone can learn the basics of coding, with the separate goal of increased participation in the field. Hour of Code has grown into a global effort to celebrate computer science during 1-hour coding activities. The campaign is supported by more than 200,000 educators across the world.

Computer Science, according to Tiogue Elementary School Principal Domenic Giusti, promotes and nurtures problem-solving skills as well as a student's ability to use creativity and logic. Students as young as kindergarteners can learn about coding through a website and resource called code.org.

"A few years ago the department of education really put the initiative forward that we wanted and needed to do computer science at all levels," Giusti said. "I think we all recognize, from educators to people in business, that we're going to need coders. It's one of those professions, computer science, where there are always jobs available throughout the whole country."

Students at Tiogue regularly log on to code.org and their Google Classroom to participate in coding activities that, to them, probably just seem more like fun games. They can code their own dance party, creating multiple characters and using code to have them perform different dance moves. By adding lines of code they can change the music, the background, the number of dancers, the actual dance moves and other features.

There are activities involving pop culture favorites, like Star Wars of Disney's Frozen, along with sports games and the ability to make their own games. Many students this week enjoyed using lines of code to navigate their characters through different mazes, commanding them to move up, down, left or right until they reach their destination.

"They have coders behind the scenes creating these games and the kids kind of learn a sequential process, how does a coder think," said Giusti. "There's always some kind of a hook for the kids, and they're actually learning how coders think and some of the code language. They can piece together a whole string of code to either then initiative a task or to solve a problem."

The activities get more advanced as students progress, eventually teaching them about encryption, algorithms and text compression. Each activity includes a guide for teachers to familiarize themselves with the game. Code.org also offers more than 200 one-hour coding tutorials.

One of the best parts about the program, Giusti said, is that it's non-evaluative.

"If they get it wrong they get a hint," he said. "I was in a class this morning and the kids had to get a dog to jump over some obstacles and get to the dog bowl and eat the dog food. They will string together the code and hit play and you will see what your character does. If you messed up, it'll say you jumped when you should have gone straight. Have the character walk again and they can go back and revise the code."

"So many kids, and even as adults we feel it," he continued. "We feel like we can't make a mistake or there's going to be consequences, but this is how they learn. If you don't make mistakes how are you going to make a change? That's kind of embedded in this."

At Tiogue Elementary the fourth grade classrooms have become the host of the program over the last few years. Now all of the students in other grade levels rotate through the Fourth Grade classrooms to work with their peers on coding. On Wednesday the kindergarteners and fifth grade students joined the fourth graders for their Hour of Code.

In the school's library media classes this week, Library/Media teacher Esther Wolk is also participating in Hour of Code with her students, meaning they're working on coding both in and outside of the classroom. Wolk also attended a course over the summer at MIT where she was

trained in the use of something called Scratch, a visual programming language and online community where children can code with blocks.

"It teaches all the concepts of coding and kids can play games and even create their own video game," said Giusti. "When I first came to Tiogue last year some of the kids took off with the Scratch stuff. The best thing about Scratch, because you want to monitor what they're doing, is that the teacher can constantly see what they're working on."

Although Hour of Code happens one week out of every year, he said, students are getting access to coding and computer science learning opportunities all year round.

"We need coders," Giusti said. "We need people with this knowledge."

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