Dora Erickson takes part in 'Hour of Code' week

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Having just finished explaining coding instructions to a class of fifth- and sixth-graders, Kevin Hemsley was surprised to find the students silent. He didn't think they understood.

"Then I finally looked around and realized 'Oh, they're way past me already,'" he said.

Hemsley, an Idaho National Laboratory cybersecurity project manager, volunteered Monday at Dora Erickson Elementary School for the "Hour of Code" week: a national initiative intended to broaden participation in computer sciences.

Dora Erickson hosted the first of INL's demonstrations, which will take place from Shelley to Ashton. Nationally, advertisements feature big-name athletes such as Serena Williams and Steph Curry pitching the benefits of technological fluency.

The coding exercises allow children to build on their predisposition toward the digital world, which Hemsley said is vital to succeeding in the 21st century.

"The younger they start, the greater advantage they'll have later on," he said. "But already, they have a level of understanding that even their parents and grandparents don't pick up on — it comes natural to them.

"I was into electronics at that age, but we didn't have the same stuff to play with."

The Dora Erickson students started with a "Caesar cipher," in this case two paper wheels featuring the alphabet.

The cipher, originally used for private correspondence by Julius Caesar, is one of the simplest encryption techniques. In it, a code letter is replaced by a letter some fixed number of positions down the alphabet.

Dora Erickson students slowly scribbled code solutions after cutting out their wheels.

"Continue on with all the letters, and we'll see who can decode this the fastest," Hemsley told the students. "And if you want to send your friend a message, you can use a different key — but don't tell anybody else what it is."

That appealed to fifth-grader Pono Mizer.

"I made another wheel for one for my friends because I want to mail him secret messages," she said.

Other students were interested in translating their manual coding skills to the keyboard. After conquering the Caesar ciphers, kids used classroom laptops to program solutions to a digital maze featuring characters from the popular mobile game Angry Birds.

Eyes glued to the laptop screen, sixth-grader Blayk Bell declared his intent to become a hacker.

"Well, I technically want to stop other hackers," he said. "But I've learned a little coding from my uncle, and I think this can help me figure out some more."

Other students' digital aptitudes were even further developed. One fifth-grader has already started to code his own video game.

Early exercises — self-initiated or otherwise — can spur lifelong passions, said Robert Hillier, program organizer and INL chief information officer.

"This is how I got to where I am right now. I was a finance major and I took a computer class that taught me to code, and I loved it," he said. "When I started they didn't even have four-year degrees because information technologies was so new."

Generation Z, whose members were born from the mid-1990s to the mid-2000s, haven't known a world without the internet. Hillier said that poses thrilling possibilities.

"Think of where they'll be in 40 years. This will be a part of everything these kids do; it'll change how they view life, the tools they use," he said. "I hope I'm around then, because it'll be exciting to see what this generation can do with electronics."

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Blayk Bell, left, and Sarah Pincock use a Caesar cipher to learn the basics of coding Monday during the Hour of Code at Dora Erickson Elementary School. To support Computer Science Week and the Hour of Code volunteers from Idaho National Laboratory came to introduce students to computer science and coding basics. John Roark / jroark@postregister.com

Elizabeth Betty, 11, uses her computer to learn the basics of coding Monday during the Hour of Code at Dora Erickson Elementary School. John Roark / jroark@postregister.com

Gio Escobar uses a Caesar cipher to learn the basics of coding Monday during the Hour of Code at Dora Erickson Elementary School on Monday. John Roark / jroark@postregister.com