

STEM LESSONS

Shikellamy class builds computers, learns coding



Francis Scarcella/The Daily Item

Shikellamy Middle School 6th-graders Kingston Jordan and Lilina Carr, both 11, work on the computer they built while teacher Brandy Fessler and Superintendent Jason Bendle look on.

6th-graders experiment with engineering

By Francis Scarcella
fscarcella@dailyitem.com

NORTHUMBERLAND — Building a computer and writing its code is easy. Just ask the sixth-graders at Shikellamy Middle School who have been building computers for several weeks.

In November, teachers Kris DeRemer and Brandy Fessler spent the day at the CSIU Computer Science workshop. There, they received kits to show students how to build a computer.

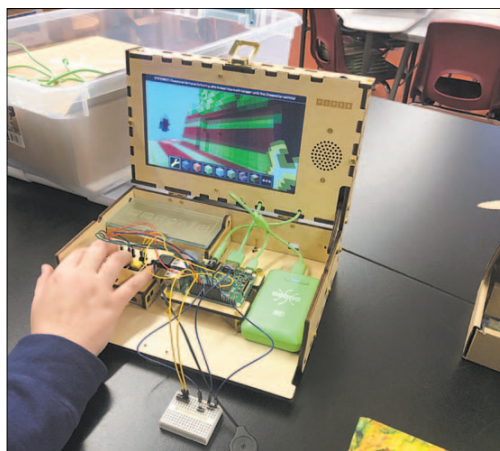
"The students in my coding class used engineering blueprints, tools, and a lot of problem-solving to construct fully-functional computers over several class periods," Fessler said. "Following assembly, the students learned the circuitry and electronic skills necessary to create controllers, interact with, and manipulate the

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computer. Currently, the students are coding games and programming electronics on the computers that they built."

The program consisted of interpreting an engineering blueprint with diagrams to build a fully functional computer, connect circuits. Students had to solve challenges to create physical devices using simulation, complete projects and learn coding principles in block-based language, learn to transition from block-based to text-based programming and explore computational thinking practices by completing prompts, creating code, or debugging and remixing, Fessler said.

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A Shikellamy Middle School student displayed one of the computers built during the program.

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Hudson Whitaker, 11, of Sunbury, said he enjoyed the class. He said was excited to be able to say he was part of a team that built a computer.

"This was so much fun and I learned so much," he said. "I am proud of this. We were able to learn how to read blueprints and use tools to put it together."

Whitaker's partner, Nate Allar, 11, of Sunbury, agreed. "I learned so much doing this," he said.

Kingston Jordan, 11, of Northumberland, found the project simple.

"This was easy to do," he said. "I had so much fun and was able to learn so much."

Lilina Carr and Jesalene Guzman, both 11, said they were thrilled to be able to get the chance to build the computer.

"It was a great experience. I can't wait to take it apart and do it again," Guzman said. Carr agreed. "We can now learn the opposite end of this and see what we remembered."

Fessler said students told her it was the first time some had used handtools.



Francis Scarcella/The Daily Item

Shikellamy Middle School 6th-graders Hudson Whitaker, 11 and Nate Allar, 11, discuss the computers they built during class with teacher Brandy Fessler and Superintendent Jason Bendle.

"They told me it was the first time they used a screwdriver and can't wait to build something again," she said. "Whether they want to enter the computer science field in the future or not, they've learned some useful skills, worked together, and gained confidence, and that makes it all worthwhile."

Superintendent Jason Bendle said the program is another ex-

ample of progress in technology for students at the middle school.

"Mrs. Fessler has worked to develop her students with computer science skills they can use in the future and exposed them to a potential career path," he said. "Our future goal is to structure our schedule so that every sixth-grade student could benefit from this opportunity."