

A castle-building competition in school

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GMCS students build their own 3D printers

Students at the Gallup-McKinley Community School District are getting the chance to be a part of cutting-edge technology in Eric Schieldrop's engineering class this year. Fifteen students from Gallup High and Miyamura will build their own mini 3D printers thanks to a donation from Sandia National Labs.

The Labs purchased the printers for \$300 each and donated them to the school.

"This is part of [the labs'] effort to support New Mexico talent and foster a community of technicians and engineers that are right in the area ... They want to help build the workforce," Schieldrop said.

The donation allows the students to participate in a program that will last six class periods to learn how to build and use the printers. Once the printers are constructed, the students get to keep them. Schieldrop said he hopes they will be able to help students in their future endeavors.

"So they're going to graduate. They keep their printer, and go off on their future education and life and stuff with this tool," Schieldrop explained. "They could take it anywhere, especially if they stick with engineering and design and technology kind of careers."

3D printers allow a person to print just about anything they can imagine. Schieldrop gave examples of a toothbrush, coffee cup, or hairbrush.

"In the old days, it would be carved out of clay or made out of wood," Schieldrop stated. "You'd kind of shape it somehow out of the material. Now it's 3D printed. So if I designed a new toothbrush, I could print it and hold it in my hand and say, 'yeah, this does fit the hand well' or 'oh, that was a bad idea.'"

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The students' final project in the engineering class will include breaking into teams of three or four to create a model village or castle. Once they design the structure, they will print it out as part of a competition. Each team will present its model. Judging is set for May 3.

Schildrop said it took the class six hours to build the printers. But that wasn't their only challenge. According to Schildrop, COVID-19 made running the class difficult. He said getting the printers to students who were learning from home was another obstacle.

GMCS' Director of College and Career Readiness Carrie Lovato pointed out the hard work involved with making the class a success during a pandemic.

"I think it's important to note that this program came about and really grew during a difficult time for everyone," she said. "Many of the students said that if it wasn't for this class, they may not have stayed in school.

"The COVID learning environment has really opened doors for new ways of connecting with people and making business partners and providing really good opportunities for kids.

The class serves as the conclusion of the STEM Core program at GMCS, which includes high-level math classes and engineering classes. Previously it was available only to seniors who had gone through the program already. But Schildrop said he's open to including more students in the future.

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