

## Make-a-thon inspires

### Make-A-Thon Inspires

Students and adults create prototypes



Leanna Deters watches as Cole Ratzlaff tests a temperature sensor on Saturday. Photo by [Jolene Guzman](#).

By [Jolene Guzman](#)

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DALLAS — Imagine building a high-tech greenhouse or chicken coop in one day — with no programming experience going in.

The 50 or so students and adults who gathered at LaCreole Middle School for Saturday's Dallas Make-a-thon don't have to imagine. They did it.

OK, so they were cardboard prototypes, but the groups completed functioning models in about six hours.



Instructor Derek Runberg, of SparkFun, began the day with a "boot camp" in writing code and circuit design. His goal was to teach participants enough about the two skills to see how they work together to make

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Photo by Jolene Guzman  
JD Shinn, at the computer, makes last-minute adjustments to his group's greenhouse and chicken coop on Saturday afternoon.

components function in the way they want it to.

Next, the group was divided into teams with kids and adults working together. They were given the choice of three assignments: Automated chicken coop, automated greenhouse, and the "toy of the future." Each group received technology kits and "building materials" — cardboard, tape, and glue — to work with.

"Using all the craft materials and the new skills that they have in terms of coding and circuit design, they have to actually quickly prototype their solution by 3 o'clock," said Thompson Morrison, of Innovate Oregon, one of the event sponsors. "Most of them have never written a line of code."

This was no quiet classroom. Teams talked over solutions, designed and redesigned over the course of the prototype building session. They groaned together when something didn't work and celebrated together when something did.

Runberg would periodically remind them of the time to add a little pressure.

More than an hour into the building session, the four-person team of teachers Leanna Deters and Jacob Gradek, and students Ethan Carter and Cole Ratzlaff put its greenhouse to the test. It was designed to open the door when the temperature hits a target and close when it drops below.

They programmed a sensor to trigger the door. They tested the temperature sensor with a hair dryer to heat it up — and by waving cardboard frantically to cool it down. It worked, but something was off — almost literally, as tape wasn't keeping the door attached.



Photo by Jolene Guzman  
Ethan Carter connects wires during the prototype designing portion of the make-a-thon on Saturday at LaCreole Middle School.

"So, we know it works," said Ethan, 13. "Do we want to make a better door?"

That, too, took a couple of test runs, but they had it attached for the final demonstration of the day. While some were in a rush at the end, all groups had functioning models by 3 p.m. when the whole group reconvened to show off their creations.

"At the core of this, it's not about the technology," Morrison said. "At the core is the creativeness that is used to solve a problem, the deeper learning that comes out of that. The type of dynamic that comes out of it, the learning happens in a very collaborative, fast-paced way. It's accelerated.

"That's why these kids and these adults by the end of the day, they're thinking, 'how did we do that?'"

Innovate Oregon, an initiative of the Technology Association of Oregon, was created to find the best ways to train workers to be creative problem solvers who can work in teams to come up with solutions quickly, Morrison said.

That starts with education and looks a lot like what was happening in LaCreole's Innovations Lab on Saturday, Morrison said.

"The traditional model is I don't move until I have everything planned out because I'm afraid of failure," he said.

"Design-thinking" — like what was encouraged at the make-a-thon — allows for failure. It's expected even.

"It's from failures that we learn. That allows us to try again being smarter," Morrison said. "Failure is an essential part of the process."

Innovate Oregon, with partner OnlineNW, have begun working in Dayton and Willamina to both transform education and business in those communities. OnlineNW brings the technology — high speed internet service — to the community, and Innovate Oregon works with schools to redesign how students are prepared for careers.

LaCreole's Principal Jamie Richardson has already begun some of that work. He's attended administrative training in adapting education to a "design-thinking" model. Saturday, with teachers, school administrators,

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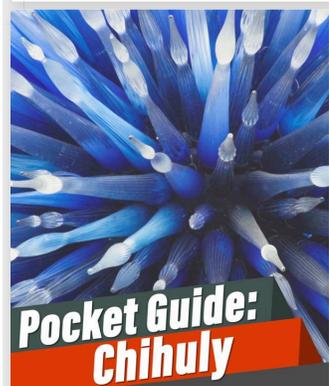


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business and community leaders in the room, that model was put on display.

The next step is training teachers to adapt it to classrooms.

"It's really important for the teachers to see, because once the teachers in the room see that, they begin to realize that the kids can learn faster than they can teach," Morrison said. "The purpose of this is for people to see the potential. Then the training gives you a pathway to actually introduce it into the building."

Educators in the room seemed ready to take the plunge.

"I really liked the engagement that was occurring across the board," said Tim Ray, Dallas High School's career-technical education coordinator. "I wonder why we had to show up here on a Saturday and learn 17 times more than we would learn in a normal school year. It blows my mind, and I'm an educator."

Teachers weren't the only people excited about using the method.

"I liked that some of us failed a couple of times and, because we failed, it was easier to fix our mistakes and go back and do it again," said Morgan Helfrich, a seventh-grader. "That's one less mistake we would make."

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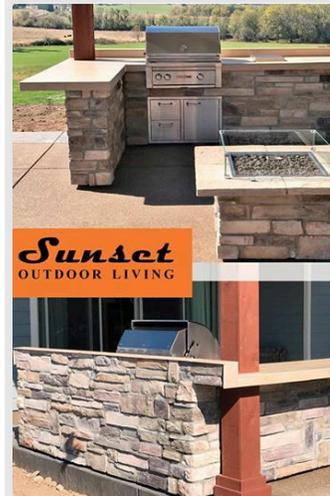
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