



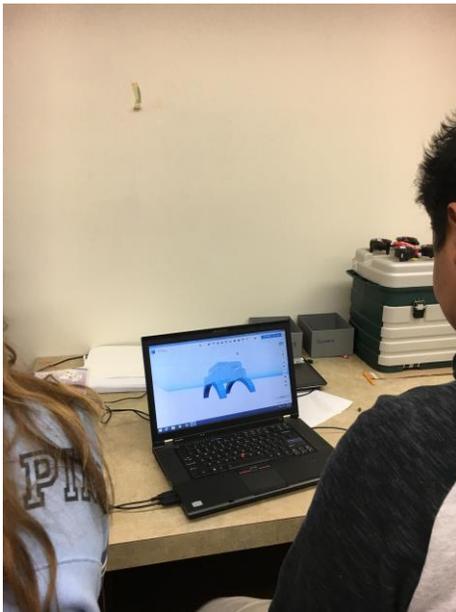
Media Release
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RCHS Students Use 3D Printer to Assist Local Agriculture Equipment Dealership

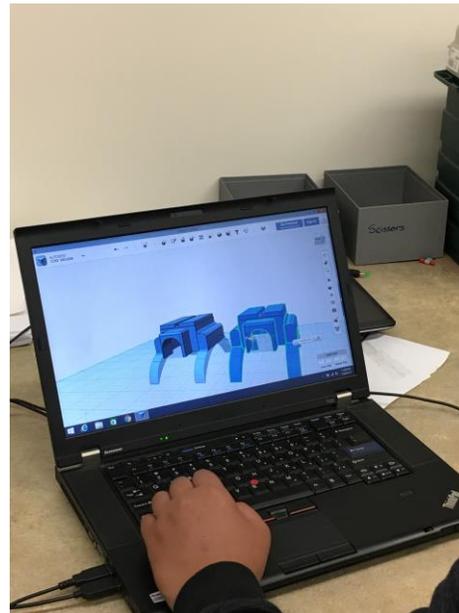
Several students at Rosetown Central High School (RCHS) have been a part of a unique learning opportunity to help a local Agriculture Equipment Dealership; Western Sales (1986) LTD, with some 3D printed projects.

The idea began when teacher Kent Carlson, approached Western Sales Technology Manager, Greg Carlson about 3D printing to inquire if he thought the RCHS students services could be of any use to Western Sales. Kent was then presented with five projects; three of which the students were able to help Western Sales develop.

The first project was a bracket for a sensor on the new Bourgault Air Drills. The sensor detects whether seed or fertilizer is actually coming out of the tank or whether there is a blockage there. This bracket helps mount and protect the sensor. Western Sales employees are currently in the field doing demonstrations with them.



Picture 1.



Picture 2.

Both pictures show the initial design for the prototype of the bracket sensor being created by John T. on 123D Design



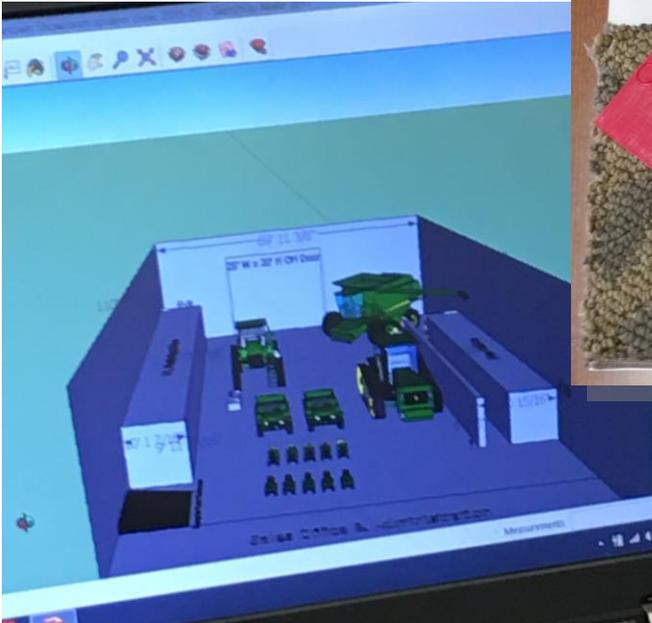
Picture 3.



Picture 4.

Picture 3. The green parts are the brackets after printing but before installation on the machine.
 Picture 4. The yellow brackets actually mounted on the drill.

The second project involved 3D printing a scaled down version of the Western Sales showroom. This includes scaled representations of different machinery so it can be arranged before actually bringing anything into the show room, which will be more efficient for Western Sales employees.



Picture 5.



Picture 6.

Picture 5. The computer design program to create the equipment to scale.
 Picture 6. The red and green rectangles represent the 'to scale', pieces of equipment used on the Western Sales showroom floor.

The third project included 3D printing a piece so that Western Sales can demonstrate the accuracy of their auto-steering. Below is the picture of what was being used – a golf club and duct tape.



Picture 7. The old version.



Picture 8.



Picture 9.

Pictures 8 & 9 are the prototypes RCHS students created and are being used in the field to show the accuracy of auto-steering.

“The process has involved us going to Western Sales three different times so far. The first time we interviewed Greg by doing a formal interview that the students developed. We were following a template from a Design Thinking course that we used for some ideas. We then discussed the interview as a group and decided on which projects would be feasible for us to complete. We then did many rounds of prototyping and returned to Western Sales to get feedback on the designs. After more prototyping and tweaking, we returned for a third time to get more feedback and only had to make small changes. We then delivered the final products and they will be tested in the field this spring/fall,” explained teacher, Kent Carlson.

Students, who are taking part in this opportunity to learn this new set of skills, are also meeting curricular outcomes from other classes. For example, in Math 9 students do rotations, reflections, and scale diagrams, which are skills that are used when 3D designing. The students are learning various computer programs such as 123D Design for starting designs from scratch, Inkscape for turning .jpeg pictures into 3D designs, and other programs that work with interior design curriculum as well.

“I really like it and I’ve learned new computer programs, which were pretty easy,” said grade 9 student, Lian. W. “The students seem to love it. They are coming in before school and during lunch to work on these types of projects and it has shown them a bit of the potential business side of 3D printing.” stated Kent. “It has also really helped them understand that failure, or as they call it ‘prototyping’, and feedback are crucial parts of the design process.” Kent also said, “The students do not fear failure anymore when they design and are very open to feedback and criticism in order to improve their products which has been a great part of the process. There are a few students who are very interested in Architecture, and this has reinforced that interest and is helping them move towards those types of careers. Another part of the process that has really intrigued some students is the entrepreneurship/marketing/advertising piece of all this.”



Picture 10.



Picture 11.

Just some of the current projects RCHS students are 3D Printing.

Picture 10. The fidget spinners being 3D printed.

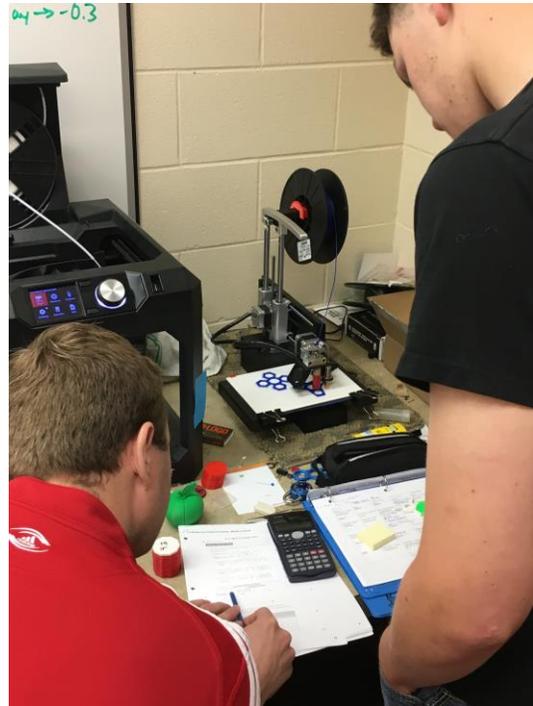
Picture 11. Cryptexes and badges that have been completed.

“We realized that we need to start publicizing our work so we have a marketing department now, an Instagram account (**@rchs_makerspace**) and we are currently designing a logo and slogan for the Makerspace, in order to spread the word. It is evolving really quickly, and in so many directions that I could never have predicted at the beginning of the year.” said Kent.

Grade 9 students Jess H. and John T. are developing the logo and slogan. Joel I. is another student on the design team who was involved in the auto-steer design project.

Other 3D Printing projects that the RCHS students are currently working on, include printing cryptex locking mechanisms and creating clues for breakout boxes, which are part of the Sun West Personalized electronically Blended Learning initiative. Joel I. and other Grade 9 students have been working on designing puzzles for the breakout boxes. Grade 9 student, Lian W. and teacher Kent Carlson are designing the prototype for the cryptex and have been working on some other versions. The class has also printing badges for school spirit teams to collect and fidget spinners, to name a few.

What an amazing opportunity for all of the students involved, and an outstanding set of skills to include on their resumes!



For more information or to set up an interview with RCHS Teacher, Kent Carlson please contact:

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