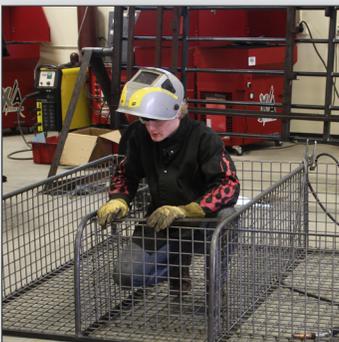


STEM BEST: Rocket Manufacturing

Businesses Engaging Students and Teachers

Affiliated School District: Rock Valley Community School District in Rock Valley, Iowa

Partnering Businesses/Higher Education: Total Component Solutions, VH Manufacturing, Double H Quality Products, Siouxland Fabricating Inc., Valley Machining Company, A&I Products, Rock Industries, Post Equipment, Siouxland Machine Inc., Kooima Company, Northwest Iowa Community College, and more.



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1. What is the goal for your STEM BEST program?

The vision of Rocket Manufacturing is to create a self-sustaining program that will provide opportunities for our students to obtain hands-on, real-world experiences. These experiences will allow students to apply the knowledge they have learned in STEM-related courses. Through Rocket Manufacturing, students will learn the values, such as responsibility, timeliness and accountability, in addition to 21st century skills that will prepare them for the world of work.

2. How many and what type of students participate in your program?

We currently have 13 students, which is 6% of the high school population. We plan to have close to 20 students in 2016-2017. Right now, our students are junior and senior males that are either Hispanic (1) or White (12). We anticipate adding one female next year. Students go through an interview process and put together a portfolio of their experiences at school and on a job.

3. Describe the physical environment of your STEM BEST program, including how it differs from standard classrooms.

The students work in a state-of-the-art 10,000 square foot shop. The shop is designed to be just like a working machine shop. There are welders, a CNC mill, a cold saw, a manual mill and lathe, a paint booth, open area for large projects, band saw, an ironworker and various other tools.

4. Describe what skills and content are covered in the STEM BEST learning environment.

Students learn a variety of things, including machine shop-related skills such as engineering software, welding and CNC skills. With that, they are developing 21st Century soft skills, such as communication, collaboration, critical thinking, time management, problem solving, self-motivation, self-confidence and experience business operations, such as marketing, managing ledgers, shipping and receiving, customer service and more.

5. What specific roles do business, community and higher education partners play in your STEM BEST model?

Rocket Manufacturing serves as a subcontractor for local businesses and about 80% of the work students do comes from local businesses. They are currently working on a project for the fire department in Granville, IA, which is about 25 miles away. In addition to the work, local businesses have donated and/or let us borrow equipment and have provided training for our staff and our students. Northwest Iowa Community College has provided about \$70,000 worth of equipment to use in the shop. Local businesses have also helped bring in donations. For example, we are currently using Job Boss, software that costs \$50,000 that was donated to us through a local machine shop.

6. What professional development has occurred to prepare educators for instruction in your STEM BEST environment?

Our lead instructor spent six weeks last summer training with local businesses where he worked with all facets of the business environment including bookkeeping, marketing, machine work, sales, engineering and more.

7. What indicators of growth are evident so far in the program?

We are seeing an increase in the number of students applying for next year's program. The number of businesses doing work with us has increased and some of the growth is through word-of-mouth as it spreads outside our own community. We will be surveying the students at the end of the year to measure personal growth against mid-year performance evaluations of each student.